

STATE OF NEVADA

21ST
BIENNIAL
REPORT
FISCAL YEARS
1957-1958

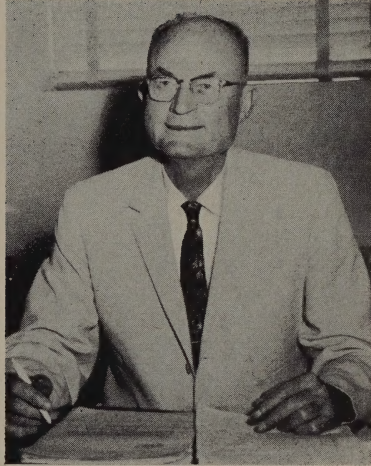


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MENT OF HIGHWAYS

letter of transmittal

*To the
Honorable Members
of the
Board of Directors
of the Department of Highways
and the
Nevada State Legislature*



Your State Highway Engineer respectfully submits herewith the Twenty-first Biennial Report of the Department of Highways for the fiscal years 1957 and 1958.

We wish to take this opportunity to express our profound appreciation for their cooperation and support to the Board of Directors, the Bureau of Public Roads, and the people of Nevada whom we serve.

A handwritten signature in dark ink, appearing to read "H. D. Miller". The signature is fluid and cursive, written over a light background.

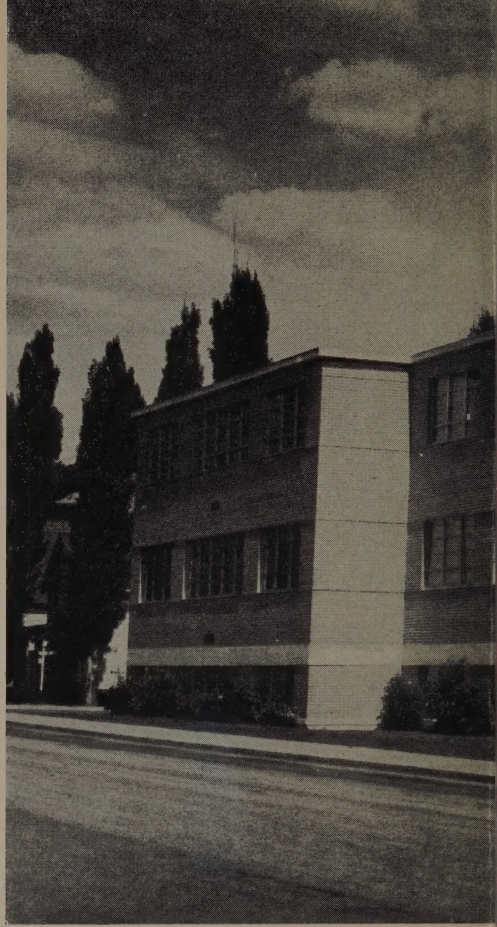
State Highway Engineer.

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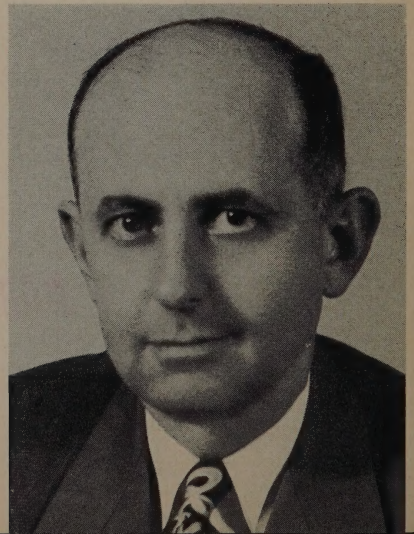
21st

BIENNIAL
REPORT

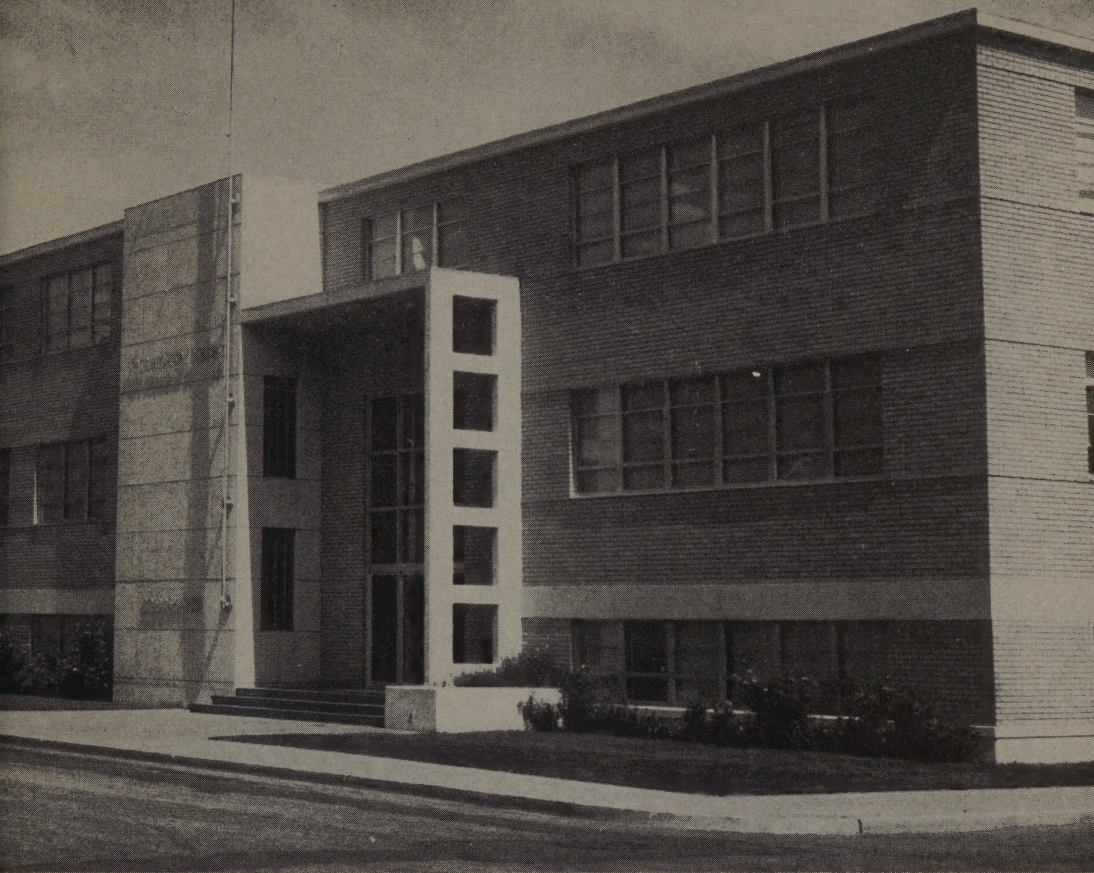
Department of Highways



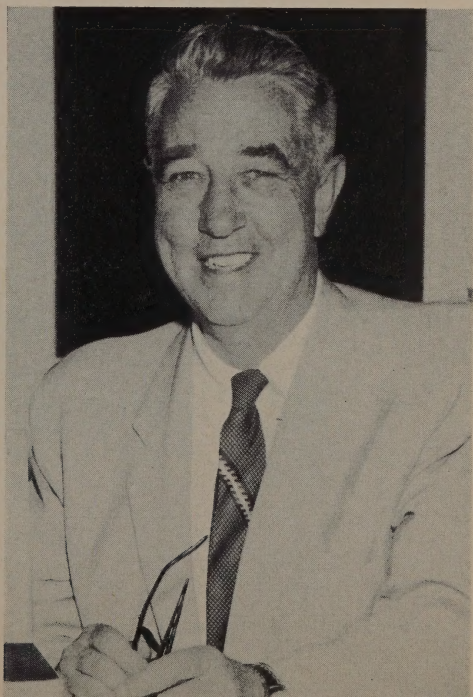
Guiding the activities of the Department of Highways during the past two years, the busiest period in its history, were the Board of Directors—Governor Charles H. Russell (right), chair-



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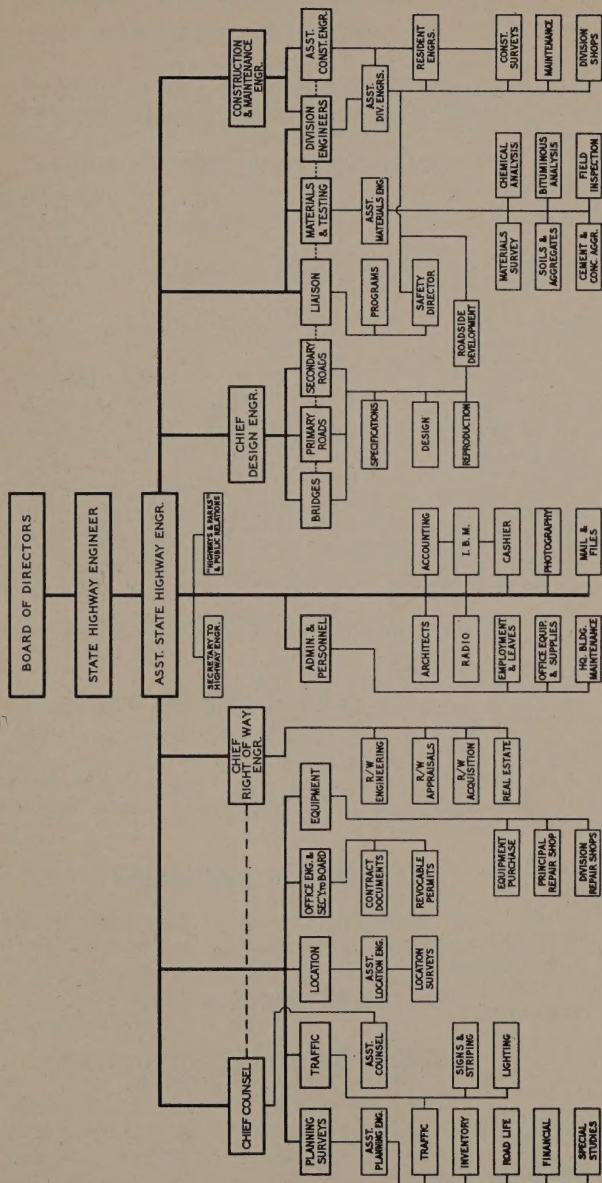
man; Attorney General Harvey Dickerson (center), member; and State Controller Peter Merialdo (left), member. Center of operations is Headquarters building in Carson City, above.



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ORGANIZATION CHART STATE OF NEVADA DEPARTMENT OF HIGHWAYS



JAN. 1, 1958

DEPARTMENT OFFICIALS

BOARD OF DIRECTORS

HONORABLE CHARLES H. RUSSELL, Governor	Chairman
HONORABLE HARVEY DICKERSON, Attorney General	Member
HONORABLE PETER MERIALDO, State Controller	Member

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H. D. MILLS	State Highway Engineer
W. T. HOLCOMB	Assistant State Highway Engineer
A. G. KINNE	Chief Design Engineer
J. D. MEACHAM	Construction, Maintenance and Secondary Roads Engineer
A. BERNING, JR.	Administrative and Personnel Officer
WILLIAM E. FREEDMAN	Chief Counsel
D. H. HAYS	Highway Division Engineer
CHARLES C. BLAKER	Highway Equipment Superintendent
RICHARD W. ACHESON	Assistant Highway Equipment Superintendent
E. T. BOARDMAN	Chief Bridge Engineer
ORVIS REIL	Chief Planning Survey Engineer
F. H. MORRISON	Chief Materials and Testing Engineer
JAMES D. WALLACE, JR.	Chief Right of Way Engineer
PAUL R. RAWLS	Chief Location Engineer
RALPH J. OTTINI	Chief Traffic Engineer
R. E. ELDRIDGE	Assistant Construction Engineer and Federal Aid Coordinator
STANLEY D. SUNDEEN	Office Engineer
L. W. LITTLE	Assistant Materials and Research Engineer
OREN W. WALKER	Chief Road Designer
CLARENCE S. EICHE	Chief Accountant
DONALD L. BOWERS	Public Information Officer
ROGER E. GAUGLER	Radio and Communications Supervisor
JOSEPH A. MOORE	Safety Director

DIVISION ENGINEERS

W. O. WRIGHT	Division No. 1
J. L. HANCOCK	Division No. 2
JULIEN A. GLOCK	Division No. 3
W. R. PARRY	Division No. 4
G. B. BROCKWAY	Division No. 5

ASSISTANT DIVISION ENGINEERS

JACK PARVIN	Division No. 1
H. A. SQUIRES	Division No. 2
DALE V. ROSE	Division No. 3
PAUL ROBBINS	Division No. 4

HIGHWAY ENGINEER'S INTRODUCTION

During the course of this biennium—in March, 1957—the Highway Department observed its fortieth anniversary. In the same period, we began work on the huge Interstate construction program approved by Congress in 1956.

Prior to this biennium, we have concentrated on what might be called pioneer roadbuilding—the gradual development of the dirt trails of 40 years ago into a 4,300-mile network of paved roads. Now, in turning our attention to the building of the modern, four-lane Interstate freeways, we are entering a new and expanded phase of highway activity. Our fortieth anniversary thus marks a turning point in our operations.

To build the 534 miles of expensive Interstate freeways planned for Nevada requires that we maintain a sound financial structure. Cost of the Interstate program in this State will amount to an estimated 230 million over the 13-year period provided for by Congress, with over 64 million already apportioned to us for 1958, 1959 and 1960.

Although the Federal Government is financing 95 percent of the cost of our Interstate construction, volume of spending for the program, together with stepped-up Primary and Secondary programs, will be much greater than any previous period in our 40-year history.

The extent of this increased spending is clearly reflected in Table 10, the record of Federal Aid reimbursements for the years 1952–1958. Here we see that Federal Aid moneys received in 1958 are more than four times greater than in 1952, this increase noted over a span of only six years.

In addition to this costly and accelerated construction program is the spiraling cost of maintenance. It is often forgotten that the State must bear the expense of upkeep for *all* highways previously constructed here and that this accumulating mileage is greater each year. The growth of our maintenance operations is seen in Table 11, where it is shown that in 1938 the average maintenance cost per mile was \$273, while in 1948 it was \$367. This year the maintenance cost per mile has reached \$769—approximately three times the cost recorded 20 years ago.

Added to this maintenance picture is the fact that many of our maintenance operations are bound to be more complicated and expensive as we move forward with our Interstate program. In building these Interstate freeways, it becomes necessary for us to provide and maintain many new design features such as overhead lighting systems, more miles of striping and guardrails, bigger and more expensive signs, and landscaped areas.

It accordingly becomes apparent from such budget trends as those noted in the preceding paragraphs, that additional State matching funds will be necessary in the foreseeable future.

Turning from the subject of highway finances, it can be reported that excellent progress has been made during the biennium on the Interstate program. One measure of this progress may be taken from

the number of public hearings held to date in Nevada. The 1956 Highway Act specified that hearings must be held for all projects "involving the bypassing or going through any city, town or village, incorporated or unincorporated," and that the Highway Department "shall certify to the Commissioner of Public Roads that it has had public hearings, or has afforded the opportunity for such hearings, and has considered the economic effects of such a location."

Under this provision of the Highway Act, the Department held eight public hearings during the biennium, the first in Beowawe in September, 1956, and the last in Reno in November, 1957.

The Highway Act of 1958 extended the requirements relative to holding hearings for Interstate projects, enabling persons "through or contiguous to whose property the highway will pass" to express any objections that they may have to the proposed location of the highway. Since passage of the 1958 Act, the Department offered opportunity for hearings relative to three projects in the Las Vegas area. Thus, a total of 11 hearings have been achieved to date, these lasting from 30 minutes to 7 hours and 10 minutes, with as many as 800 people present at a single hearing.

PERSONNEL

The growth of the Highway Department as covered in the last biennial report has continued its climb to an all-time high. The increased highway building program has brought many changes to the Department, particularly in engineering personnel.

In June 1956 there were 185 professional engineers on the payroll. Since that time the figure has increased to 200. During the same period total personnel has increased from 896 to 1,052. The average number of monthly employees for the biennium 1954-1956 was 791. For the biennium ending June 1958 the figure was 954, making an increase of 163 employees or a growth of over 20 percent.

Part of this growth is due to continual increase of actual construction work, but a good percentage is seen in Headquarters as a result of the completion of the new State Office Building which allowed non-highway State agencies to move from the Highway Building. This relieved the congestion in our building and permitted expansion of our own divisions, making room for much needed additional personnel.

Because certain phases of highway engineering and administration have become highly specialized, many positions in these fields cannot be filled except by persons having specific training and experience rather than general training. This problem has been met with a four-way program which has been adopted by the Department and put into operation in conjunction with the State Personnel Department, as follows:

1. Advancement of present employees having several years of progressive experience and an interest in self-education. This is carried out under a systematic and regular program, and employees are advanced to more responsible positions when they have been certified by the State Personnel Department for promotion to higher classifications.

2. Employment of graduates from engineering schools of recognized standing when they are available.

3. Employment of engineering students from colleges and universities during summer vacations.

4. Employment of qualified applicants from other states when certified by the State Personnel Department, and when residents of Nevada are not available to fill vacancies in specialized fields.

The student training program which began in 1956 has grown steadily and is producing very favorable results. Under this program students who pass the qualifying examination and who are able to arrange classes so that mornings or afternoons are free, are hired on a half-day basis as trainees in various divisions of the Highway Department. Students receive training in our methods and procedures, for which they are paid an hourly wage as set by the Personnel Department. They also receive credit from the high school. Open to both boys and girls who can qualify, this program allows us to train for permanent employment those who do not plan to continue into higher education. Through a combination of half-time high school training and full-time summer employment we are attempting to interest not only high school graduates, but also college students in engineering and other subjects related to the Highway Department.

PLANNING SURVEY

The statewide highway planning survey division was initiated late in 1935, but it was not until April 1936 that the project became fully operative.

As conditions and needs have developed, operations have been modified and supplemented, so that in addition to the three basic phases—inventory, mapping, and traffic—initiated in 1936, we now have road life, local fiscal, special studies, and photogrammetry, as well as an expanded stenographic section.

INVENTORY

Inventory, the source of basic data used in other phases of planning, was instituted in 1936, with six survey parties of three men each. The operation has now resolved itself into four crews—one control and three logging parties, composed of two men each. Each truck is equipped with special gyroscope, odometer, and recording equipment.

The second cycle of inventory, which is now under way and scheduled for completion early in 1959, indicates a total mileage of roads logged of nearly 40,000, compared to 23,000 miles in 1936, with the rate of increase by counties nearly equal in most cases. Counties inventoried during the past two years were Eureka, Lander, Lincoln, Nye, White Pine, and part of Elko.

MAPPING

Because of the large areas covered by revisions, our revised maps are in great demand. During the biennium, county maps were completed for Churchill, Lincoln, and Mineral Counties. Two-color State traffic-flow maps were released, one depicting 1956, the other 1957

traffic, and two-color traffic-flow maps for Churchill and Mineral Counties were released.

County maps were issued for all Federal-aid Primary, Federal-aid Secondary, and other State-interest roads, each showing applicable control sections for all sections of road.

Official State road maps for 1957 and for 1958 were developed and were lithographed by a commercial mapmaker. In addition, a tourist map in three-dimensional relief was released in 1958, the lithographed product being handled by a commercial mapmaker. For inclusion in a report on the Survival Plan Project of the State Civil Defense Agency, a series of maps was prepared.

Apart from these regular mapping functions, innumerable sketches and graphs were prepared for other divisions of the Department.

TRAFFIC

Traffic types and volumes are two of the main factors used by the highway engineer and planner in selecting routes and construction standards.

Planning survey maintained fixed automatic traffic recorders at 21 key sites throughout the State. Three of these sites are equipped with double recorders so that traffic may be studied by direction.

A camera-type recorder developed by personnel of planning survey during the biennium has proved to be reliable, and additional recorders of this type will soon replace part of the 20-year-old IBM mechanisms now in use.

Statewide traffic counts were taken with portable traffic recorders on all primary and secondary roads as well as on other major State routes. At the end of the biennium, three men were employed on the field work, laying recorders at 1,061 sites four times during a calendar year. Traffic counts for all county roads used by more than five cars per day were completed in Lincoln, Nye, White Pine, and the southern parts of Lander and Eureka Counties. The greater share of the blanket counts in Elko County were also completed. Data from the statewide traffic counts are published in a report entitled "Annual Traffic Report—Nevada Highways." Another annual traffic publication of primary importance is the "Tabulation of Annual Traffic Census." This study has been made for 35 years and the summary, much in demand, carries statistics on the July traffic census for the past 10 years.

ROAD LIFE

Road Life is concerned with cost studies, physical aspects, and life expectancy of State-interest roads. Records compiled by this unit carry data on length, width, surface type, date of construction, improvement and retirement records, and cost figures. *Road Life* (RL-7) graphs for all State-interest roads have been completed during the biennium and are now being converted into finished form for distribution.

LOCAL FISCAL

This unit compiles and analyzes data on user revenues and expenditures for road purposes for all political subdivisions of the State.

Regular monthly tables and graphs on motor-vehicle user revenues

and vehicle registrations were prepared and published throughout the biennium.

SPECIAL STUDIES

Prior to this biennium, this section was not in operation but its functions were carried on as supplemental loads in the Inventory and Traffic sections.

Other than for routine operations and intersection and turning movement studies, the important projects carried on by this unit were an origin-destination study at Verdi; an origin-destination study pertaining to a portion of State Route 8A west of Denio; an expanded loadometer study during the summer of 1957 (required by Section 210 of the 1956 Federal Aid Highway Act); the statewide motorist study begun in the spring of 1958; and origin-destination studies in the vicinities of Lovelock, Winnemucca, and Fallon, all conducted early in 1958.

PHOTOGRAMMETRY

Photogrammetry, the latest unit to come into being, has developed rapidly. All specifications for aerial contracts are written by this section following collaboration with the design division.

Checking of map sheets furnished by aerial survey contractors and field checking of the contractors' work is accomplished by or supervised by personnel of the unit.

In most cases, major control used to determine alignment for aerial surveys had been established by personnel of planning survey.

During this biennium, field work and the maps for five projects were checked, and one job under way was partially checked.

STENOGRAPHIC

All major annual and numerous special reports issued by planning survey were prepared for release in this section, much of the report material being assembled in form for offset printing.

Principal reports released during each year of the biennium were the Federal-aid Primary Road Log; Federal-aid Secondary Road Log; U. S. Road Log; Annual Traffic Report; Control Section Index; and the Federal-aid Secondary Descriptions.

Audograph disks and stenorette tapes of material gathered in the road-logging project were transcribed into manuscript form.

RECONNAISSANCE AND SURVEYS

During the past biennium the reconnaissance and survey division has employed two location engineers and four to five full-time survey parties of six to seven men each. The location engineers are required to make a field reconnaissance on certain projects that are planned, or might be planned, for future surveys and construction. In addition to this preparatory work, the location engineers maintain close supervision of location work while the surveys are in progress in an effort to obtain the most feasible location survey with regard to alignment, grades, cost of construction, and safety to the road user when the highway construction work is completed.

During the first part of this biennium, five full-time parties were employed on location surveys. However, during the latter part of the biennium, the survey division was reduced to four full-time survey parties since location survey work was slightly ahead of design and construction, and also because additional experienced personnel were required for construction work. During winter months the location forces are usually considerably increased when men are transferred from construction engineering crews to location survey work.

During the past biennium, survey work was performed in each of the 17 counties. However, as it should be, the bulk of the surveyed mileage is recorded in those counties which have the greatest traffic volumes, and consequently the greatest need for highway improvements. These counties are those traversed by Routes U. S. 40 and U. S. 91, both being portions of the Interstate system. On certain portions of these two routes the surveys have been, and will be, performed by aerial surveys under contract to outside firms specializing in this type of work.

The past few years have proved, throughout the country, that aerial surveys are the most expeditious and feasible on certain highway projects. This is especially true of Interstate projects through urban areas and mountainous areas where wide right-of-way widths and a wide band of detailed topography are required. This is necessary in securing the most feasible locations in regard to alignment, grades, and construction costs on multiple-lane highway projects of this type. To secure this basic information by ordinary field surveys would involve tremendous amounts of detailed work—time consuming and costly. Aerial surveys are not only advantageous on Interstate projects but also on certain sections of the Primary and Secondary highway systems.

Although aerial surveys are more expeditious and economical on the more difficult sections, the bulk of the location work is performed by our own personnel, by the usual field methods. Most of the Primary and Secondary highway projects, as well as a considerable portion of the Interstate system, are surveyed by our own personnel. This is evidenced by the fact that aerial surveys constitute only about 10 percent of all location surveys completed during the past biennium.

Four aerial survey contracts were let during the past biennium, covering a total of 77 miles. The above contracts provided maps with a coverage of a 1500-foot minimum width band, at horizontal scale of $1'' = 50'$ with a two-foot contour interval. The ground control was set to second-order accuracy. The contracts cover ground control surveys, aerial vertical photography, photo-index maps, topographic maps and other related work necessary to complete the design of the projects. All of the above contracts have been substantially completed. These aerial survey contracts, involving a total of 77 miles, were completed at a cost of \$148,929.36. While some projects involve more costs per mile than others, the survey costs on these four projects average about \$1,934 per mile.

In addition to the aerial surveys, a contract was let to a private engineering firm for a field survey and the complete design of a 10.75-mile highway project from Fallon easterly. This is an alignment change on a portion of Route U. S. 50 to permit the expansion of runways at

the Fallon Navy Auxiliary Air Station. The principal reason for contracting this project was the necessity for getting construction quickly underway. Approximately one year had elapsed from the time the Navy Department first requested the route change to the time when Navy funds were available for the survey. The cost of the project is to be financed 100 percent by the Navy Department.

During the biennium, 404.89 miles of Interstate, Urban and Primary highway surveys were completed by State forces at a cost of \$522,483.47. The maximum cost for a single project was \$4,950 per mile; however, the average cost for the total was \$1,290.43 per mile. An additional 228.87 miles of Secondary highway projects were completed at a cost of \$182,211.09. The maximum cost for a single project was about \$3,600 per mile; however, the average cost for all jobs was \$796.13.

All surveys by State forces total 633.76 miles at a cost of \$785,692.06, the average cost per mile being \$1,239.73. This represents an increase of about 7 percent in mileage, and about 14 percent in costs as compared to the previous biennial period.

DESIGN DIVISION

During the biennium the following projects, comprising 72 contracts, were designed and placed under construction:

Number	Type	Cost	Mileage
18	Primary highway projects (F Funds)	\$11,183,625.00	113.403
5	Primary highway projects (DF Funds)	1,992,704.00	47.027
35	Secondary highway projects	10,947,223.00	346.629
5	Interstate highway projects	7,919,113.00	20.529
4	Aerial survey projects	178,315.00	74.500
2	State highway projects	124,022.00	11.464
8	Maintenance stations	474,175.00	
3	Well drilling projects	5,589.00	
1	Highway patrol building and lighting system	14,445.00	
81		\$32,839,211.00	613.552

Preliminary engineering costs on the above projects:

Highway construction projects	\$242,300.00
Aerial surveys	101,299.00
Total	\$343,599.00

In addition to the above listed projects the following work was assigned to outside consulting firms for route location studies:

Number	Description	Cost	Mileage
1	Calif.-Nev. state line to 3 mi. east of Sparks	\$101,200.00	20.00
1	McCarran Airport to Apex summit	93,500.00	24.00
	Total	\$194,700.00	44.00

Consulting engineering firms have also been employed for the survey, design, and preparation of plans on the following projects:

Number	Description	Cost	Mileage
1	Calif.-Nev. state line to Lawtons	\$380,000.00	8.00
1	McCarran Airport to Bonanza Road	400,000.00	8.00
1	Bonanza Road to north limits of North Las Vegas	240,000.00	3.00
1	Fallon to Salt Wells	33,000.00	11.00
	Total	\$1,053,000.00	30.00

Work on the above four projects is still underway; however, it is anticipated that the construction contracts will be let to bid in the 1959-1960 biennium.

The average number of employees in the design division during the biennium was 96, representing an increase of approximately 15 percent over the 1955-1956 biennium. After the Department took over all the State Office Building early in 1958, the design division was assigned two small office rooms and two medium-size drafting rooms. This additional space made limited expansion possible and some reorganization of the design sections.

Due to the introduction of new and advanced engineering techniques, it has been necessary to establish within the design division a new section to work with aerial mapping including photogrammetry, route selection, location, design, etc.; and a section to work with electronic computers and related equipment in the calculation of earthwork, traverses and other engineering problems. It has also been necessary to establish a section to act as liaison between the Department and the various consulting engineering firms so that all design standards, as established by AASHO and the State of Nevada, are adhered to. This section also acts as liaison between the Department, consultants, and the Bureau of Public Roads in regard to design standards, methods, etc.

The reproduction division, which operates under the design division, has also been required to modernize equipment, materials and methods in order to keep abreast of the rapidly advancing engineering techniques. We now have a modern plant, doing all reproduction work required by the entire Highway Department.

The introduction of the Interstate highway program, in 1956, with full freeway controls has created many problems for the highway designer in determining interchange layouts, frontage roads, control of access and the many other design features required to meet the standards adopted by AASHO and the Bureau of Public Roads.

The average cost of preparing plans, estimates and specifications for the biennium was approximately 4 percent of the total construction budget.

BRIDGE DIVISION

During this biennium, nearly twice as many bridges and grade separation structures were constructed as during the previous biennium, new structures numbering 38 as compared to 20 in 1955-1956. In addition, 12 structures have been widened. The total estimated cost of these 50 structures is \$1,846,750, compared to expenditures of \$926,500 the previous biennium.

Now under construction in Clark County are two overpasses using prestressed concrete beams, the first structures of this type to be built in Nevada. This type of design has only recently been developed in this country, and during the last five years its use has increased to one of major importance.

Prestressed concrete bridge members have now been developed to the point where they are competitive with other types of materials. As with any new product, there are problems to be overcome. But as we gain experience we will be able to take better advantage of this type of construction in the future. We are now planning several other projects employing this type of bridge.

As construction on the new Interstate highway system progresses,

there is an increased necessity for highway grade separation structures. At present, there are four structures of this type under construction in Washoe County and two in Clark County. These are concrete box type since they are particularly adaptable to locations where foundation conditions are not good.

Of the 38 new bridges, 10 are in Clark County, 8 in Washoe County and 6 in Churchill County. The other 14 are distributed in seven additional counties.

Up to June 30, 1958, construction made possible by the emergency highway program included the two projects which called for bridges, one in White Pine County and the other in Churchill County where three bridges will be widened.

Early in 1958, the bridge division moved into a larger room with space for several additional employees. We expect to get additional employees in the near future who will help produce the more and better structures demanded under our expanded program.

CONSTRUCTION

During the biennium, 68 contracts covering various highway projects including the construction or reconstruction of 529.696 miles of road at an estimated cost of \$28,488,986 were awarded. An additional four contracts were let for aerial surveys.

Of these 68 contracts, 39 were completed during the biennium, covering 292.434 miles at a contract cost of \$13,774,996.45. Contracts under-way but not completed on June 30, 1956, number 29 and cover 237.262 miles at an estimated cost of \$14,713,990.

In addition to the above, 28 contracts awarded prior to July 1, 1956, covering 225.753 miles were completed during this biennium at a total contract cost of \$9,797,621.69.

Of the 68 contracts awarded during the biennium, six were for the construction of 37.330 miles of four-lane highway, 16 were for the construction of 134.679 miles of hot plantmixed bituminous surfaced highway on the Primary system, seven were for 52.033 miles of plant-mixed bituminous surface on the Secondary system and 25 were for the construction of 305.654 miles of roadmixed bituminous surface on the Secondary system. Eight contracts were for the construction of maintenance station buildings at Carson City, Currant, Lovelock, Mt. Montgomery, Pine Valley, Reno, Ruby Valley and Winnemucca at a total estimated cost of \$474,175. One was for the construction of a building for the Highway Patrol at the Wells Port of Entry, three were for the drilling of wells at various maintenance stations, one was for highway lighting at the Clark Station interchange on U. S. 40 east of Reno and one was for the construction of guardrail on the Clear Creek grade in Douglas and Ormsby Counties.

The total estimated cost of the six contracts awarded for the construction of 37.33 miles of four-lane highway is \$10,613,880 or an average of \$284,326 per mile. Three of these contracts cover 20.359 miles of the Interstate system as designated in the Highway Act of 1956, two on U. S. 40 in Washoe County and one on U. S. 91 in Clark County. One of these covering the construction of 6.285 miles of four-lane highway

between 9½ and 15¾ miles east of Sparks was the largest contract ever awarded by the Department to date, it being for \$2,631,957. The contract for the construction of the four-lane Clear Creek highway between Carson City and Lake Tahoe was for \$2,487,707. This included only a temporary roadmixed surface using the local material available on the job. A permanent plantmixed bituminous surface will be constructed after two or three years have elapsed, or after all settlement of the exceptionally high fills has taken place.

In addition to the above listed contracts awarded by the State Highway Department, the Federal Bureau of Public Roads awarded three contracts covering 10.534 miles of road at an estimated cost of \$1,297,000. Of these, one for \$511,000 was for the construction of a second tunnel through Cave Rock on the east shore of Lake Tahoe on U. S. 50, one was for 5.521 miles between Lake Tahoe and Mt. Rose Summit and one for 4.386 miles over Secret Pass in Elko County.

These jobs were financed with Federal Forest funds; however, all maintenance costs will be financed with State funds.

TRAFFIC AND SIGNS

Under the supervision of the Traffic Engineer, the division completed about 3,400 miles of centerline striping each year of the current biennium. This output should increase materially as Interstate projects move to completion in the State.

The division also manufactured highway signs in the Reno shops, amounting to approximately \$50,000 in value. As in the case of centerline striping, manufacture of signs promises to rise greatly as the result of Interstate construction, for which larger and more complex signs will be required.

The division planned the installation of traffic signal and lighting systems at numerous intersections in the State during the period. And, following a policy developed in recent years, the division posted speed limits in several hazardous areas, such as on the highway through Carlin Canyon. Signing these dangerous stretches for 45 miles-per-hour speeds has paid dividends from a safety standpoint and no fatalities were recorded during the period in these areas.

The new Clear Creek grade to Lake Tahoe has been effectively posted with a 50 mile-per-hour speed limit. Also, in cooperation with the Nevada Motor Transport Association, a recommended 25 mile-per-hour speed for trucks was established on the grade with excellent results.

MATERIALS TESTING AND RESEARCH

During the fiscal years 1957 and 1958, the materials and research division of the Department not only equipped and trained personnel for the 20 to 25 field laboratories under its supervision, but also helped design and equip a complete branch laboratory situated at the Division One offices at Las Vegas.

In general, the number of tests made and reported shows an increase of slightly over 41 percent for the 1957-1958 period as compared to the 1955-1956 biennium.

Tests run by the Las Vegas branch laboratory and those made by the field laboratories are not included in the following summary for the biennium.

The following tabulation shows, in condensed form, the breakdown of the 19,534 tests made in the Carson City laboratory:

Material tested	Number of tests	
<i>Concrete Materials—</i>		
Portland cement.....	151	
Coarse and fine aggregate.....	405	
Cylinders—		
(a) Tested in Carson but made at job site.....	2,901	
(b) Made in Carson laboratory.....	266	
Building blocks—		
(a) Compressive strength.....	77	
(b) Percent absorption.....	28	
Pipe—		
(a) For absorption test.....	6	
(b) Compressive strength test.....	20	
Miscellaneous and special.....	73	
		3,927
<i>Gravel Surface, Base and Fill Materials—</i>		
Gravel surface and base—		
(a) Pit samples or preliminary.....	1,982	
(b) Finished product.....	362	
Miscellaneous.....	603	
Soils—		
Subgrade samples.....	3,747	
		6,694
<i>Metallic Materials—</i>		
(a) C.M.P.....	1,980	
(b) Reinforcing steel.....	435	
(c) Structural steel.....	129	
(d) Miscellaneous.....	85	
		2,629
<i>Bituminous Materials—</i>		
(a) Liquid asphalts.....	2,501	
(b) Penetration asphalts.....	2,171	
(c) Emulsified asphalts.....	312	
(d) Miscellaneous.....	599	
		5,583
<i>Miscellaneous and Special Tests—</i>		
(a) Paints and preservatives.....	12	
(b) Determination of oil percentages for base and surface aggregates.....	265	
(c) Unclassified special tests.....	424	
		701
Total.....		19,534

RIGHT-OF-WAY DIVISION

The right-of-way division has as its responsibility the acquisition of all real properties that are required for highway purposes. These include rights of way, maintenance station sites, material sites, radio tower sites, roadside recreational sites, and last but not least, access rights. To accomplish all of these requires a study of the proposed highway design as it will affect property to be traversed, determination of ownership, preparation of maps and land descriptions, appraisals, preparation of agreements, deeds, and other legal documents, and lastly, the negotiations for the needed property by right-of-way agents.

Because of the expanded highway program and the increasing participation by the Federal Government in the acquisition costs of right of way, the Bureau of Public Roads has recognized the many and complicated problems connected with right of way throughout the nation. The Bureau, accordingly, has encouraged the highway departments in all states to revamp their respective right-of-way organizational set-ups and procedures.

In Nevada, the right-of-way division expanded considerably during the biennium and is now under the supervision of a Chief Right-of-Way Engineer with staff status. The division has four sections—right-of-way engineering with 12 employees, right-of-way appraisal with 5 employees, right-of-way negotiation with 8 employees, and right-of-way clearance with 2 employees. In addition, there are 2 clerk-stenographers, making a total of 30 employees. It is anticipated that this number will increase by 10 or 12 during the next year.

Close cooperation with the legal division of the Department is enjoyed since it is necessary that many of the papers prepared in connection with right-of-way work be reviewed and approved. Many condemnation matters are handled by the two divisions.

During the biennium the sum of \$516,561 was expended for land purchases, together with the sum of \$99,745 for adjustments and moving of improvements, and damages. These figures do not include salaries and expenses of personnel, court costs, fees, printing, office supplies or incidentals.

A provision of an Act of the 1957 Legislature requires every State agency owning or acquiring land or interests in land to provide the information necessary for the newly created Department of Conservation and Natural Resources, Division of State Lands, to maintain an index of all such land conveyances together with certain other data. This has been a rather time-consuming chore within the right-of-way division.

To maintain the best of public relations, this division through its agents spares no effort to make friends for the Department through fair, courteous, and impartial treatment of affected property owners. Members of this division have appeared at various public and private meetings to discuss highway requirements and right-of-way features.

The right-of-way agents are members of Sacramento Club Affiliate, Chapter 2, of the American Right-of-Way Association. Membership in this national organization is educational in nature and has given a broader understanding of the scope of right-of-way work. Several Nevada men attended the 4th National Seminar in San Francisco, California, in May 1958.

LEGAL DIVISION

The legal division, comprised of a chief counsel and an assistant, is responsible for advising the Department in all legal matters. The division was established following authorization by the 1957 Legislature. Prior to this time, the Attorney General had been responsible for highway and legal matters, handling them through a specially appointed deputy assigned to the Department.

One of the division's primary duties is the acquisition of real property by means of condemnation actions under the State's power of eminent domain. To accomplish this, various pleadings must be prepared, together with maps and photographs of the property in question. Expert witnesses in the land appraisal field are hired, and they, together with the appraisers working in the right-of-way division,

testify in court to establish the fair market value of the property condemned.

At present, there is a chief counsel, an assistant counsel and a stenographer in the service of this division. Because of the increasing number of legal actions being handled, it is felt that soon it will be necessary to hire two or more additional attorneys.

Of extreme importance to the State, in general, is the establishing of good judicial law in the field of eminent domain. Most of the cases that have reached the Supreme Court have dealt with the acquisition of property under the power of eminent domain, as by public utilities. Only three cases involving the State Highway Department have been brought to this tribunal. The State is in need of decisions so that the rules established by the Supreme Court of the State of Nevada can guide the appraisal of the properties to be acquired by the Department and the negotiations of its right-of-way agents for them.

Eminent domain is an extremely large and complex field of the law, and there are many diverse opinions on identical points of law. Each state must travel the path alone, looking to its sister states for some guidance. But, as each state has its own problems, it should be determined by the highest tribunal of the state as to what of the various rules of law shall be adopted. This is one of the primary tasks of the legal division.

At present, there are approximately 20 condemnations and other miscellaneous suits pending before the courts of this State. Most of these actions are in Clark and Washoe Counties, the two most heavily populated counties of the State.

OFFICE ENGINEER

CONTRACTS AND LETTINGS

During the biennium, 68 contracts were awarded at 47 lettings. This is an increase of five contracts over the previous biennium with the same number of lettings. In addition, four aerial survey contracts were awarded. The average number of bidders for both highway construction and aerial survey contracts was six, one more than the average for the biennium just passed.

Under Table 13 will be found information relative to the miles of construction and reconstruction completed and under contract on the designated State highway system at the close of the biennium.

The four aerial survey contracts awarded covered 74.5 miles.

PREQUALIFICATION OF CONTRACTORS

During the preceding biennium, the number of contractors remained relatively constant. However, during this biennium there has been a steady increase in the number of those seeking and obtaining prequalification. At the close of the biennium, there were 100 approved prequalified contractors representing an approximate increase of 50 percent during the period.

Following is a tabulation indicating the number of contractors prequalified by the Department at the close of the biennium, arranged in brackets of bid ratings:

Rating	Number of contractors
\$5,000,000 and over.....	28
2,500,000 to \$5,000,000.....	25
1,500,000 to 2,500,000.....	7
1,000,000 to 1,500,000.....	8
500,000 to 1,000,000.....	21
250,000 to 500,000.....	6
100,000 to 250,000.....	5

It is interesting to note that the increase in prequalified contractors is in the higher brackets. This does not necessarily mean that old-line contractors are prequalifying in a higher bracket, but that well-established contractors from outside the State are apparently seeking jobs farther away from their usual working areas.

PERMITS

A. Highway Encroachments—

During the biennium, 375 permits were issued for the following encroachment categories:

Telephone lines.....	122
Power lines.....	61
Telegraph lines.....	1
Service pipe—	
Gas lines.....	43
Water lines.....	39
Sewer lines.....	35
Culverts.....	1
Approach roads and driveways.....	52
Miscellaneous.....	21
Total.....	375

The above total represents better than a 50 percent increase over the previous biennium in the number of permits issued, a good percentage of these covering extensive and costly installations of great economic significance to the State.

B. Transportation—

Requests for transportation permits have continued to increase at an accelerated rate. At the start of the biennium, slightly over 100 permits per month were being issued, and this rose to nearly 500 per month at the close of the biennium.

5,447 permits for loads exceeding legal limits were issued during the biennium. This is an increase of 2,689 over the previous biennium. The following number of loads were moved under these permits:

Heavy and highway industry.....	2,329
Farm equipment.....	198
House trailers.....	2,238
Buildings.....	3,206
Military.....	169
Prefabricated steel items, etc.....	112
Miscellaneous.....	241
Total.....	8,493

A remarkable growth is noted in all of these categories, especially in permits for house trailers, movement of which is already creating a serious traffic problem.

In addition to the above, 75 continuous overload permits were issued for mine to mill, or production source to processing point movement. This type of permit provides for axle loadings not to exceed determined limits and for movement over a prescribed routing. Materials moved under this authority included logs, silica sands, cinders, fluorspar and aggregates.

It should be pointed out that out of the 2,329 permits issued for heavy and highway industry, 251 cover construction equipment and are "blanket-type" permits. Such permits allow the movement of listed equipment over a general area, usually within a certain radius of the permittee's headquarters and over approved routings, under the jurisdiction of the Department. No attempt has been made to determine the number of individual unit movements made under this form of permit, but it is a very considerable number.

AUTHORIZATIONS

During the biennium, 128 job authorizations for additions and betterments and extraordinary maintenance were in effect. The following table indicates the number of authorizations issued to each division and the total expenditures covered by the authorization.

Division	Number of authorizations	Total expenditures during biennium	Incomplete job authorizations	Grand total
One.....	19	\$297,656.04	\$91,994.43	\$389,650.47
Two.....	29	59,112.98	5,682.82	64,795.80
Three.....	27	78,892.67	35,481.76	114,374.43
Four.....	16	65,207.11	16,733.19	81,940.30
Five.....	18	132,536.64	34,835.16	167,371.80
Headquarters.....	11	41,267.06	3,300.58	44,567.64
Equipment.....	8	12,059.45	8,517.64	20,577.09
Totals.....	128	*\$686,731.95	\$196,545.58	\$883,277.53

*Includes \$101,592.63 authorized during previous biennium, but expended during the biennium.

SECRETARY—BOARD OF HIGHWAY DIRECTORS

During the biennium, it was necessary for the board to hold 102 regular meetings for the purpose of holding bid openings, meeting with delegations, conducting hearings, and disposing of all business required by law to come before it.

IBM SECTION

The expansion of the IBM section during the last two decades has been significant, not only from the standpoint of equipment acquired, but also in the volume of work performed for various divisions of the Department.

The first machines, consisting of a key punch and sorter, were acquired in July 1937, to perform statistical planning functions. During this period, punched cards were produced in Carson City, then sent for processing to the IBM Service Bureau in Sacramento. In 1939, a tabulator, numeric type 405, was acquired which enabled the Department to assume many planning-survey functions and to begin recording accounting data.

By 1946-1948, manual payroll systems were converted to IBM methods and the Department adopted the uniform system of punched card accounting prescribed by AASHO and used by most other state highway organizations.

The increased workload resulting from mechanization of the payroll and account procedure necessitated additional equipment and operators. A high-speed alpha numeric type tabulator, a high-speed summary punch and collator were obtained and the number of personnel increased to a supervisor and five employees.

By 1953, the IBM section was installed in small quarters in the then-new State Office Building and was undertaking comprehensive field studies, notably the Reno and Las Vegas parking survey and origin-destination and truck loadometer studies. These types of jobs indicated the need for a larger and faster tabulator and one was acquired late in 1953. This new tabulator of the 402 type allowed much faster operation, but the section was hampered by the lack of adequate space.

By 1957, the Department recognized the advantages of machine computation in the engineering field, an operation which was already being performed by IBM in many other states. For this purpose, a new type 604 computer was ordered, this model capable of turning out masses of mathematical computations quickly, accurately, and at relatively low cost. In addition to a greater number of statistical and accounting computations performed with this new machine, earthwork computations are being performed and procedures being developed to do engineering traverse computations and other phases of engineering computations.

In all, hundreds of different jobs are now being handled by fast, accurate IBM methods, representing a saving to the Department of several hundred man-hours per week. Speed of the operation is evidenced by the example of an earthwork problem, solved by IBM in less than three days as opposed to the some three months the problem would require of a skilled engineer to complete. Thanks to the IBM machines, engineers are freed from routine calculations to work on more important aspects of highway construction.

Early in 1958, IBM moved again into the present, more spacious quarters which are already showing signs of inadequacy. From the simple machines of 1937, the IBM section now has become the largest

single installation in the State, employing a supervisor, 13 full-time personnel and two part-time trainees. A replacement of at least one of the two tabulators by a larger tabulator of the 407 series is contemplated as the section enters a period of even greater production.

SAFETY SECTION

New regulations governing working procedures and installations as well as increased insurance rates were determining factors in creating the safety section, which was established in January, 1958.

Safety committees of each of the five divisions have been formed and given the responsibility of correcting unsafe conditions and practices within their boundaries. Methods of communications have been broadened so every employee will be informed of safe and correct work procedures.

A general safety committee meets periodically to discuss and pass on recommendations and proposals beyond the scope of the divisional safety committees.

In cooperation with such agencies as the Nevada Industrial Commission's safety division and the American National Red Cross, classes have been held to bring employees up to date on safe working practices and first aid.

Statistical data are being compiled to show the accident trend. Emphasis through training is being placed in those areas showing a greater number of accidents or a pattern of similar accidents.

It is indeed gratifying to report a 12 percent decrease in the number of accidents for the first six months of 1958 over the same period in 1957. Safety awareness on the part of every employee will undoubtedly result in continued decreases in both suffering to the individual and costs to the State.

COMMUNICATIONS

The Highway Department communications system has grown considerably since its inception in 1954 and now consists of 233 mobile units, 8 mountain-top repeater stations and 27 base stations. This radio equipment is installed throughout the State, the heaviest concentration covering the headquarters area. The equipment is maintained by well-equipped radio shops throughout the State, operated by six radio technicians at strategic points.

The heaviest workload on the entire radio system occurs during the winter months when weather conditions make access to some of the mountain-top locations both difficult and hazardous. The office workload also greatly increases in winter since Nevada road condition reports are compiled and disseminated by the headquarters communications section. To assist the traveling public, two automatic telephone answering recording units were installed this year which greatly simplified handling the large volume of incoming calls concerning highway conditions. For the convenience of drivers interested in conditions on Nevada highways or on highways adjacent to the State, this answering service is provided seven days a week.

Since the motoring public is traveling our highways in ever-increasing numbers, both winter and summer, the role of the communications unit in public safety is becoming increasingly important.

PUBLIC INFORMATION

A difficult public relations problem faced highway organizations throughout the country two years ago when the Interstate freeway program became a reality. The program was at once so large and complex, and involved so many new concepts in highway design, that it met with a certain amount of resistance nationally. However, since a general understanding and acceptance of the program was vital, all states undertook intensive campaigns to explain and popularize the building of these huge, safe highways of tomorrow.

In Nevada, as in other states, the public information section has given great attention to publicizing the Interstate program during this biennium. Toward this end, a pamphlet, *Better Roads for Nevada*, was produced and distributed to all schools in the State. Two smaller brochures concerning urban freeway projects were designed for special use at the Reno and Las Vegas hearings. And, in order to keep the public as fully informed as possible, the section provided dozens of news releases and informational material concerning freeways to county and city groups, chambers of commerce and to newspapers and radio and TV stations. Film programs and speeches were arranged and special articles written for local outlets.

Continuing its program to encourage tourist travel to Nevada, the section distributed four issues, fifty thousand copies each, of *Nevada Highways and Parks Magazine*. Two other issues were in preparation during the biennium, one on the press and another, a special issue dedicated to the Virginia City centennial, was in the planning stage.

To handle the increasing workload, the section was enlarged during the biennium and now is staffed by a public information officer and an assistant. Apart from the functions already mentioned, the two-man section sent individual letters or tourist materials in reply to the several hundred tourist inquiries received every month by the Highway Department. Other activities included publication of a monthly newspaper for employees and preparation of special tourist brochures, monthly road reports, the biennial and other special reports.

EQUIPMENT DIVISION

In order to better coordinate the Statewide operations of the equipment division, supervision of shops in all divisions was placed with the equipment superintendent in June 1957. Formerly, shops had been under the joint administration of the equipment superintendent and the several division engineers.

As maintenance operations in Nevada have become larger and more complex, the need for better, more modern equipment has become greater and, accordingly, the equipment inventory has shown steady gains. In the past eight years, from 1950 to June 30, 1958, this gain

has amounted to almost 70 percent, reflecting the growth of the highway fleet from 869 to 1,278 units.

During the past biennium, the inventory has grown steadily. In 1956-1957, 55 new units and 49 replacements were purchased, this total of 104 units costing \$448,979. In 1957-1958, 59 new units and 80 replacements were purchased, a total of 139 units costing \$558,855.

It is the desire of the equipment division to obtain the most modern and efficient types of equipment available. Purchase of a heater planer in 1958, the first in the State, exemplifies the kind of machinery which greatly speeds and simplifies maintenance operations. The heater planer applies up to 2,000 degrees of heat to the pavement, moving at a speed of 20 to 30 feet a minute, to improve the riding surface with minimum inconvenience to the public.

DIVISION OPERATIONS

Responsible for the upkeep of Nevada's highways are the five highway maintenance divisions with main offices in Las Vegas, Reno, Elko, Ely and Tonopah.

As new roads are added each year to the State system, the maintenance operations carried out by the divisions constantly increase. In addition to this basic function, a number of services have been provided in recent years for the enjoyment of the motoring public—landscaping and planting, roadside cleanup, and construction of roadside rests, for example.

To keep pace with this larger workload, all of the divisions have increased their personnel and facilities, as indicated below:

Division	Miles maintained	Average employed	Maintenance stations
One (Las Vegas)	685	80	9
Two (Reno)	1,063	105	17
Three (Elko)	930	70	12
Four (East Ely)	850	58	11
Five (Tonopah)	849	60	11

Major structures completed during the biennium consisted of a new laboratory and radio building and shops in Division One; the Lovelock maintenance station, radio building and storage shed in Division Two; Quinn River maintenance station and a port of entry building in Division Three; division shops and offices and the Currant maintenance station in Division Four; and the Montgomery maintenance station in Division Five.

Reviewing construction progress throughout the State, it is seen that during the biennium in Division One, 22.11 miles of Primary construction and 64.23 miles of Secondary construction were completed. A large Interstate project north of Las Vegas, the first on U. S. 91, 9.9 miles in length and costing over two million dollars, was begun during the period. Design of the costly Las Vegas urban freeway was also underway.

In Division Two, 61.53 miles of Primary, 67.71 of Secondary and .17 of Interstate construction were completed. Two large Interstate projects in the Truckee River canyon were also nearing completion, these calling for the construction of a total of 10.4 miles of Interstate

highway costing over four million dollars. Completed during the bien-nium, in October 1957, was the new nine-mile Clear Creek grade to Lake Tahoe which, at a cost of about 2.5 million, was the most expensive project yet undertaken by the Department.

In Division Three, 26.84 miles of Primary, 27.3 miles of Secondary and 5.53 miles of Interstate construction were completed during the period and an additional 66.54 miles of Secondary work were in progress. The Interstate project, 5.53 miles over Pequop Summit, was the first limited-access, four-lane job to be completed in the State.

Completed in Division Four were 36.6 miles of Primary and 38.32 miles of Secondary construction. Work underway at the end of the period consisted of 14.05 miles of Primary and 28.59 miles of Secondary construction.

In Division Five, 20.05 miles of Primary and 88.65 miles of Secondary construction were completed, and 9.48 miles of Primary work were still in progress. Important among these jobs were two Secondary projects on State Route 25, completion of which gave Nevada a new, fast highway linking Tonopah and Caliente.

In answer to an increasing tourist demand for roadside rests, all divisions gave considerable effort to improving existing facilities or adding new ones. To overcome the problems of water and shade, several of the divisions installed wells and shelters. In some areas, stoves and toilets are provided. The 37 roadside rests located in the State are being enjoyed by a growing number of drivers, both residents and tourists in Nevada.

OTHER		
Accounts receivable	Miscellaneous	Total
-----	\$160,570.54	\$160,570.54
	77,699.94	141,551.04
\$7,730.56	220,281.27	473,302.96
45,496.18	608,056.04	1,281,380.02
80,192.07	541,000.31	1,327,759.52
37,019.61	145,456.88	1,329,133.82
68,751.67	147,979.87	1,952,887.13
78,092.07	120,622.72	3,149,400.06
28,951.88	229,849.54	2,891,932.75
28,299.26	40,632.64	1,784,749.59
33,773.10	163,477.52	1,991,942.97
33,991.50	113,635.12	1,859,197.96
15,422.93	163,407.87	2,376,825.66
27,268.16	107,118.46	2,258,249.77
12,369.41	250,939.51	1,531,903.86
22,094.40	305,737.14	4,157,963.71
23,683.76	391,299.32	3,859,245.38
17,097.69	46,347.96	4,721,482.46
59,736.27	51,097.01	5,143,106.73
18,144.68	14,039.12	5,609,611.47
16,488.96	19,185.64	5,021,993.57
38,245.50	114,680.77	4,883,144.66
23,475.66	1,000.00	4,589,222.84
33,913.41	14,781.41	3,977,831.75
25,763.04	11,059.87	4,367,082.38
24,217.03	1,030.96	4,693,013.87
32,948.03	1,000.00	4,972,839.95
43,583.66	650.00	4,091,827.96
32,928.12	167.53	2,875,332.09
39,139.50	27.86	3,563,685.87
43,429.56	101.54	6,669,073.29
67,672.48	142.66	6,541,147.43
190,141.47	11.59	8,027,183.90
74,072.37	1.20	8,645,043.34
50,866.55	-----	9,103,181.88
164,897.83	-----	9,311,029.41
138,764.61	101,538.74	12,773,279.57
72,473.95	-----	12,356,422.60
48,319.74	60,220.21	12,723,340.71
87,506.20	-----	16,349,055.57
121,885.81	25,102.44	19,678,452.58
119,354.25	-----	24,212,092.40
-----	-----	-----
128,202.93	\$4,249,951.20	\$237,737,525.02

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TABLE 1

HISTORICAL RECORD—HIGHWAY REVENUES—1917-1958

Year	HIGHWAY USER REVENUES				PARTICIPATION BY OTHERS			OTHER		
	State's share gas and diesel fuel tax	Motor vehicle registration fees	Carrier license fees	Drivers' licenses	Federal aid	City and county	Other	Accounts receivable	Miscellaneous	Total
1917									\$160,570.54	\$160,570.54
1918		\$63,851.10							77,699.94	141,551.04
1919		30,738.25			\$125,570.65	\$88,982.23		\$7,730.56	220,281.27	473,302.96
1920		329.75			385,906.73	225,211.32	\$16,380.00	45,496.18	608,056.04	1,281,380.02
1921					566,590.63	439,976.51	10,000.00	80,192.07	541,000.31	1,637,759.52
1922					754,815.47	379,738.87	12,152.99	37,019.61	145,456.88	1,329,183.82
1923					1,287,060.51	431,073.94	18,021.14	68,751.87	147,979.87	1,952,887.13
1924	\$60,000.00	96,877.15			2,146,590.15	590,839.98	56,377.99	78,092.07	120,622.72	3,149,400.06
1925	156,149.03	239,995.85			1,735,853.73	476,222.24	24,910.48	28,951.88	229,849.54	2,891,932.75
1926	230,389.73	71,357.72			930,747.40	427,708.82	55,614.02	28,299.26	40,632.64	1,784,749.59
1927	233,501.30	97,797.58			995,545.02	406,694.92	61,153.53	33,773.10	163,477.52	1,991,942.97
1928	259,731.32	109,749.02			1,040,934.23	282,282.20	18,874.57	33,991.50	113,635.12	1,859,197.96
1929	554,906.80	107,097.18			1,098,609.18	436,112.25	1,269.45	15,422.93	163,407.87	2,376,825.66
1930	674,711.02	147,493.81	\$48,292.25		1,120,686.76	132,679.31		27,268.16	107,118.46	2,258,249.77
1931	375,063.05	92,994.22	36,173.50		731,363.74	33,000.43		12,369.41	250,939.51	1,531,903.86
1932	764,349.77	217,239.86	65,450.00		2,763,866.69	8,250.00	10,975.85	22,094.40	305,737.14	4,157,963.71
1933	674,978.56	96,921.61	71,035.40		2,581,635.94	19,690.79		23,683.76	391,299.32	3,859,245.38
1934	804,597.15	110,668.49	148,101.72		3,592,012.04	2,657.41		17,097.69	46,347.96	4,721,482.46
1935	926,600.29	169,116.26	163,358.53		3,749,304.38	23,893.99		59,736.27	51,097.01	5,143,106.73
1936	1,085,290.55	165,888.94	221,223.92		4,090,024.26	15,000.00		18,144.68	14,039.12	5,609,611.47
1937	1,190,383.40	200,887.56	200,734.30		3,337,643.98	56,669.73		16,488.96	19,185.64	5,021,993.57
1938	1,282,599.60	158,500.25	201,699.83		3,080,768.08	5,463.55	1,187.08	38,245.50	114,680.77	4,883,144.66
1939	1,320,501.96	166,349.35	218,745.42		2,855,737.84	1,100.00	2,312.61	23,475.66	1,000.00	4,589,222.84
1940	1,509,892.75	189,169.18	258,811.45		1,961,063.94	10,082.95	116.66	33,913.41	14,781.41	3,977,831.75
1941	1,670,551.63	227,953.06	306,011.90		2,115,580.43	10,162.45		25,763.04	11,059.87	4,367,082.38
1942	1,904,568.78	339,542.73	404,449.16	\$67,614.00	1,951,591.21			24,217.03	1,030.96	4,693,013.87
1943	1,742,251.52	318,351.28	388,520.25	18,255.75	2,471,513.12			32,948.03	1,000.00	4,972,839.95
1944	1,402,385.58	337,817.90	451,407.43	61,393.51	1,793,789.88	800.00		43,583.66	650.00	4,091,827.96
1945	1,301,771.95	309,583.98	400,386.91	47,886.79	782,606.81			32,928.12	167.53	2,875,332.09
1946	1,910,308.27	342,270.76	471,957.73	32,871.43	767,110.32			39,139.50	27.86	3,563,685.87
1947	2,401,528.61	413,148.51	540,648.69	59,670.25	3,204,712.30	5,833.83		43,429.56	101.54	6,669,073.29
1948	2,609,593.15	422,736.42	635,471.44	44,154.35	2,761,376.93			67,672.48	142.66	6,541,147.43
1949	2,718,654.97	441,938.65	683,235.62	72,009.92	3,664,359.88	256,831.80		190,141.47	11.59	8,027,183.90
1950	2,852,791.21	480,103.37	823,595.40	42,602.08	4,366,214.87	5,662.84		74,072.37	1.20	8,645,043.34
1951	3,253,439.80	520,428.24	1,078,626.92	80,847.06	4,068,205.45	22,802.86	27,965.00	50,866.55		9,103,181.88
1952	3,796,529.25	674,531.25	1,299,397.49	51,376.07	3,322,297.52			164,897.83		9,311,029.41
1953	4,411,443.73	785,304.57	1,540,429.31	81,458.00	5,684,340.61			138,764.61	101,538.74	12,773,279.57
1954	4,767,954.97	821,112.30	1,690,945.87	80,043.00	4,902,816.80	21,075.71		72,473.95		12,356,422.60
1955	5,219,432.56	570,582.36	1,712,509.89	91,186.00	5,021,089.95			48,319.74	60,220.21	12,723,340.71
1956	6,006,222.43	1,170,679.99	1,179,923.40	153,541.10	7,695,881.65	55,300.80		87,506.20		16,349,055.57
1957	6,304,461.57	1,227,950.75	2,061,899.98	159,268.35	9,757,664.98		20,218.70	121,885.81	25,102.44	19,678,452.58
1958	6,132,067.75	1,247,071.25	2,018,974.12	164,785.10	14,529,839.93			119,354.25		24,212,092.40
Totals	\$72,539,604.01	\$13,184,130.50	\$19,322,017.83	\$1,308,962.76	\$119,793,323.99	\$4,873,801.73	\$337,530.07	\$2,128,202.93	\$4,249,951.20	\$237,737,525.02

Publicity and information	Special traffic studies	General administration	Total dis- bursements	Collection costs (From table 8)	Grand total
		\$10,774.00	\$36,985.07		\$36,985.07
		23,429.98	75,327.59		75,327.59
		38,222.73	592,118.68	\$27,745.04	619,863.72
		59,227.32	1,495,782.06	48,204.69	1,543,986.75
		69,498.17	1,144,891.38	132,248.36	1,277,139.74
		77,837.81	1,449,349.14	3,176.47	1,452,525.61
\$2,159.75	\$1,324.53	133,907.64	2,251,162.34	83,088.96	2,334,251.30
4,865.73	1,726.25	107,530.77	3,115,375.76	45,652.83	3,161,028.59
6,026.44	1,618.99	83,285.22	2,825,661.29	36,094.32	2,861,755.61
8,668.61	3,028.77	41,757.83	1,438,584.75	42,285.05	1,480,869.80
914.87	2,258.45	61,480.86	1,945,945.16	47,004.07	1,992,949.23
18.70	2,190.80	88,280.14	1,791,213.43	40,522.67	1,831,736.10
	3,683.26	58,490.02	2,184,191.97	30,794.54	2,214,986.51
	3,226.43	55,080.04	2,472,122.50	67,738.13	2,539,860.63
	48.55	32,488.81	1,483,856.18	46,709.07	1,530,565.25
	3,459.55	46,691.21	4,126,638.29	78,218.61	4,204,856.90
	3,450.84	43,686.26	3,656,536.20	71,067.72	3,727,603.92
	3,621.96	44,852.96	4,893,976.73	72,561.22	4,966,537.95
	3,460.77	56,532.28	4,822,219.74	141,815.66	4,964,035.40
	1,392.27	87,137.38	5,395,453.18	145,574.46	5,541,027.64
	5,777.99	108,450.02	5,333,683.48	182,136.99	5,515,820.47
	422.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
618.78		119,011.61	4,367,342.46	158,867.25	4,526,209.71
3,013.40	6,306.86	134,699.57	3,591,333.69	187,923.79	3,779,257.48
4,070.90	7,226.54	137,348.50	4,287,077.07	221,896.51	4,508,973.58
7,507.92	7,444.55	136,061.43	4,105,944.79	305,915.60	4,411,860.39
8,121.60	8,024.24	132,417.04	3,628,911.28	407,063.32	4,035,974.60
3,872.94	10,028.96	137,213.81	3,109,074.60	311,786.91	3,420,861.51
2,948.71	9,736.48	135,853.31	2,142,170.68	284,169.51	2,426,340.19
2,645.75	10,154.42	157,096.91	3,021,063.12	300,268.19	3,321,331.31
1,972.73	10,671.52	209,795.53	7,297,857.82	348,724.26	7,646,582.08
2,924.78	12,584.63	231,809.34	6,831,837.46	418,888.77	7,250,726.23
5,696.33	15,255.98	208,564.40	7,720,096.66	588,381.01	8,308,477.67
4,706.27	16,087.04	215,859.70	8,320,671.76	404,010.56	8,724,682.32
9,376.30	10,257.63	233,053.07	8,390,101.20	439,755.39	8,829,856.59
19,411.22	10,346.83	287,284.33	8,374,929.86	701,872.00	9,076,801.86
18,693.07	10,172.60	287,603.61	10,737,772.71	676,481.11	11,414,253.82
9,558.09	11,625.86	300,972.69	11,385,090.18	926,080.82	12,311,171.00
4,644.32	13,374.21	342,408.31	12,393,817.89	811,302.99	13,205,120.88
9,173.49	16,443.91	320,553.46	14,809,333.30	1,055,921.85	15,865,255.15
8,525.94	17,889.34	421,610.86	18,200,965.81	1,024,076.62	19,225,042.43
9,089.18	21,865.10	580,511.29	23,559,279.05	1,394,939.38	24,954,218.43
24,384.80	24,114.74				
\$83,610.62	\$290,303.16	\$6,197,016.64	\$223,244,999.17	\$12,482,106.65	\$235,727,105.82

CHART 1

FEDERAL-AID AND STATE REVENUES
BY FISCAL YEARS 1917-1958

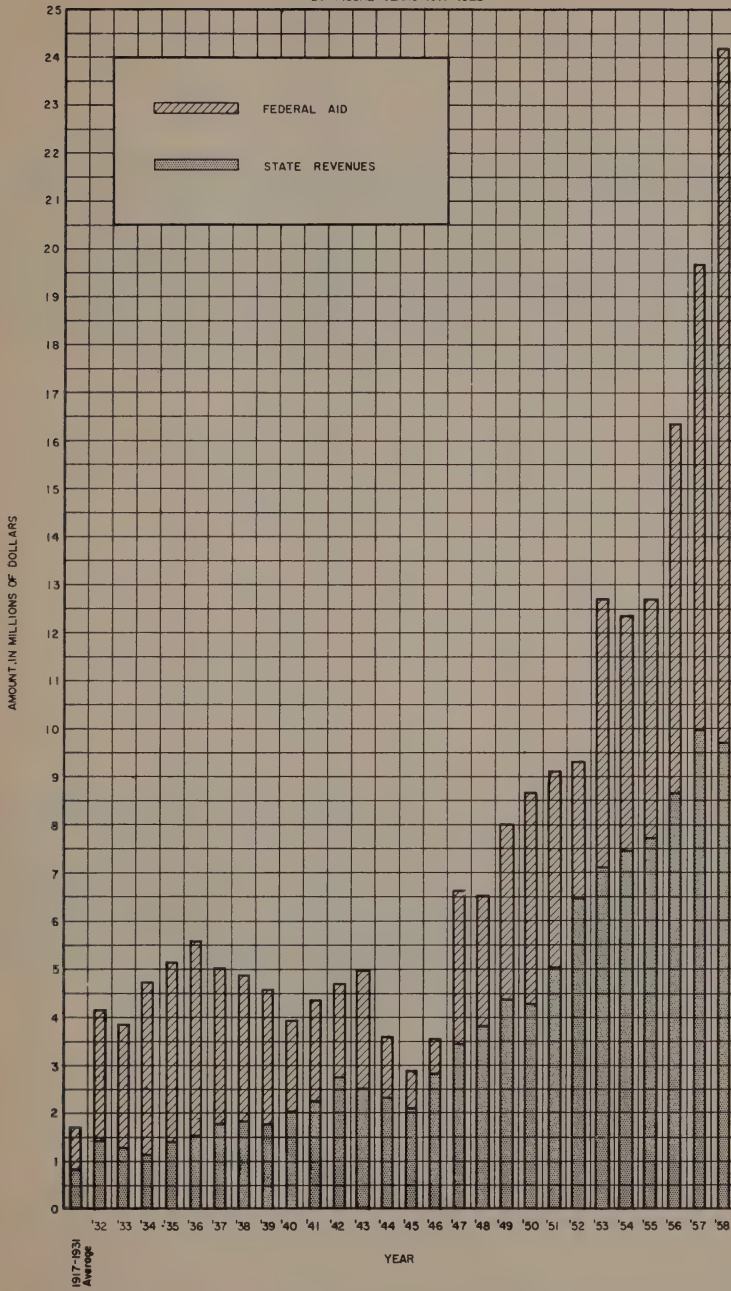


TABLE 2

HISTORICAL RECORD—DISBURSEMENTS—1917-1958

Year	Preliminary engineering	State construction	Federal aid	General maintenance	Traffic and sign division	Reno plant equipment	Buildings	Highway publications	Road maps	Publicity and information	Special traffic studies	General administration	Total disbursements	Collection costs (From table 8)	Grand total		
1917	\$16,646.70					\$8,873.99			\$690.38			\$10,774.00	\$36,985.07		\$36,985.07		
1918	19,437.92			\$16,596.54		15,788.10			85.05			23,429.98	75,327.59		75,327.59		
1919	48,328.95	\$265,323.87	\$125,570.65	29,330.21		85,241.93			100.34			38,222.73	592,118.68	\$27,745.04	619,863.72		
1920	60,000.76	774,477.34	385,906.73	44,121.16		171,122.35			926.40			59,227.32	1,495,782.06	48,204.69	1,543,986.75		
1921	43,018.03	532,430.28	566,590.63	33,601.26		100,761.91		\$499.12	15.80			69,498.17	1,144,891.38	132,248.36	1,277,139.74		
1922	98,959.03	441,952.42	754,815.47	61,997.55		12,395.97		1,390.89				77,837.81	1,449,349.14	3,176.47	1,452,525.61		
1923	114,561.55	618,334.47	1,287,060.51	110,724.87		18,573.76		1,574.62	88.16	\$2,159.75	\$1,324.53	133,907.64	2,251,162.34	83,088.96	2,334,251.30		
1924	64,194.80	552,471.46	2,146,590.15	122,788.60		28,270.31		1,650.74	233.25	4,865.73	1,726.25	107,530.77	3,115,975.76	45,652.83	3,161,028.59		
1925	53,963.26	673,255.20	1,735,853.73	240,070.46		73.84		2,910.53	407.15	1,618.99	1,618.99	83,285.22	2,825,661.29	36,094.32	2,861,755.61		
1926	59,671.88	71,501.88	930,747.40	320,764.14		28,270.31		2,180.08	338.00	8,668.61	3,028.77	41,757.83	1,438,584.75	42,285.05	1,480,869.80		
1927	53,586.22	485,114.75	995,545.02	368,992.90		73.84		326.83	148.65	914.87	2,258.45	61,480.86	1,945,945.16	47,004.07	1,992,949.23		
1928	63,150.77	221,789.59	1,040,934.23	378,685.00		3,938.23			102.43	18.70	2,190.80	88,280.14	1,791,213.43	40,522.67	1,831,736.10		
1929	60,039.92	466,733.32	1,098,609.18	436,035.53		60,450.51			150.23		3,683.26	58,490.02	2,184,191.97	30,794.54	2,214,986.51		
1930	87,490.48	615,032.29	1,120,686.76	503,899.15		86,548.23			159.12		3,226.43	55,080.04	2,472,122.50	67,738.13	2,539,860.63		
1931	83,759.01	299,277.20	731,363.74	307,839.50		28,886.65			192.72		48.55	32,488.81	1,483,856.18	46,709.07	1,530,565.25		
1932	166,332.59	510,614.02	2,763,866.69	618,377.41		16,904.58			392.24		3,459.55	46,691.21	4,126,638.29	78,218.61	4,204,856.90		
1933	119,796.10	377,015.08	2,581,635.94	566,845.41		36,241.67			240.45		3,450.84	43,686.26	3,656,586.20	71,067.72	3,727,603.92		
1934	140,176.38	574,906.16	3,592,012.04	502,715.66		35,244.51			447.06		3,621.96	44,852.96	4,893,976.73	72,561.22	4,966,537.95		
1935	200,505.03	206,735.45	3,749,304.38	617,784.47		12,537.37			434.73		3,460.77	56,532.28	4,822,219.74	141,815.66	4,964,035.40		
1936	220,140.19	282,927.72	4,090,024.26	675,726.06		36,241.67			336.10		1,392.27	87,137.38	5,395,453.18	145,574.46	5,541,027.64		
1937	247,986.84	513,777.34	3,337,643.98	846,033.35		246,942.54	\$21,642.18		1,527.53		5,777.99	108,450.02	5,333,683.48	182,136.99	5,515,820.47		
1938	207,372.40	215,118.91	3,080,768.08	756,305.26		30,193.15			4,076.14		422.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81		
1939	210,318.11	308,980.06	2,855,737.84	836,391.37	\$3,776.76	10,606.53			3,013.40	618.78	5,777.99	108,450.02	5,333,683.48	182,136.99	5,515,820.47		
1940	230,311.01	373,526.48	1,961,063.94	768,822.28	11,398.25	85,618.64			4,070.90	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81		
1941	234,576.06	651,045.97	2,115,580.43	779,833.39	23,881.16	288,423.60	34,563.98		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81		
1942	284,696.12	420,374.35	1,951,591.21	851,607.37	101,511.29	294,341.32	45,839.64		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81		
1943	99,602.88	198,911.55	2,471,513.12	745,483.00	60,572.95	23,717.87	23,717.87		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81		
1944	86,396.91	312,817.94	1,793,789.88	703,625.27	49,796.82	13,853.57	13,853.57		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81		
1945	77,989.62	169,221.14	782,606.81	773,827.80	52,388.71	130,384.29	7,098.83		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81		
1946	155,458.84	684,509.81	767,110.32	855,366.78	55,969.67	256,993.77	66,859.67	5,013.89		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81	
1947	273,327.10	1,679,781.89	3,204,712.30	1,051,426.35	72,422.82	750,334.07	29,106.56	11,238.45		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81	
1948	351,039.58	1,837,296.09	2,761,376.93	1,195,746.18	65,055.77	302,514.20	43,344.30	22,702.76	6,783.06		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
1949	480,644.26	1,393,520.06	3,664,359.88	1,299,520.66	153,760.34	361,827.12	100,940.58	29,382.99	7,883.83		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
1950	515,800.03	1,281,327.44	4,366,214.87	1,264,302.53	205,176.53	246,466.25	158,572.45	39,434.20	7,883.83		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
1951	470,008.53	1,396,214.56	4,068,205.45	1,421,292.66	199,004.45	279,713.04	251,657.23	30,107.60	11,086.56		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
1952	625,212.56	1,605,641.02	3,322,297.52	2,076,882.61	179,291.78	203,722.26	274,392.25	35,831.88	13,188.01		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
1953	580,736.02	1,478,321.36	5,684,340.61	1,909,382.22	249,070.54	30,383.25	508,380.99	27,659.81	14,974.42		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
1954	949,768.77	2,116,775.97	4,902,816.80	2,220,343.87	294,995.08	203,722.26	274,392.25	35,831.88	13,188.01		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
1955	1,009,267.06	2,920,129.07	5,021,089.95	2,150,006.15	257,821.89	246,769.96	380,029.89	37,997.48	17,546.65		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
1956	1,195,953.78	1,780,897.90	7,695,881.65	2,463,242.60	296,460.30	327,268.61	548,556.67	23,440.09	17,936.62		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
1957	1,610,407.80	2,710,921.84	9,757,664.98	2,406,218.68	362,128.38	433,157.09	427,327.05	56,649.69	35,968.37		7,507.92	3,013.40	4,222.31	138,646.42	4,439,252.86	171,141.95	4,610,394.81
1958	2,000,805.75	2,136,105.74	14,529,839.93	2,935,831.66	374,582.94												
Totals	\$13,671,429.60	\$34,155,108.99	\$119,793,323.99	\$36,268,387.92	\$3,069,066.43	\$5,371,667.56	\$3,635,870.12	\$446,000.89	\$163,213.25	\$183,610.62	\$290,303.16	\$6,197,016.64	\$223,244,999.17	\$12,482,106.65	\$235,727,105.82		

CHART 1

FEDERAL-AID AND STATE REVENUES
BY FISCAL YEARS 1917-1958

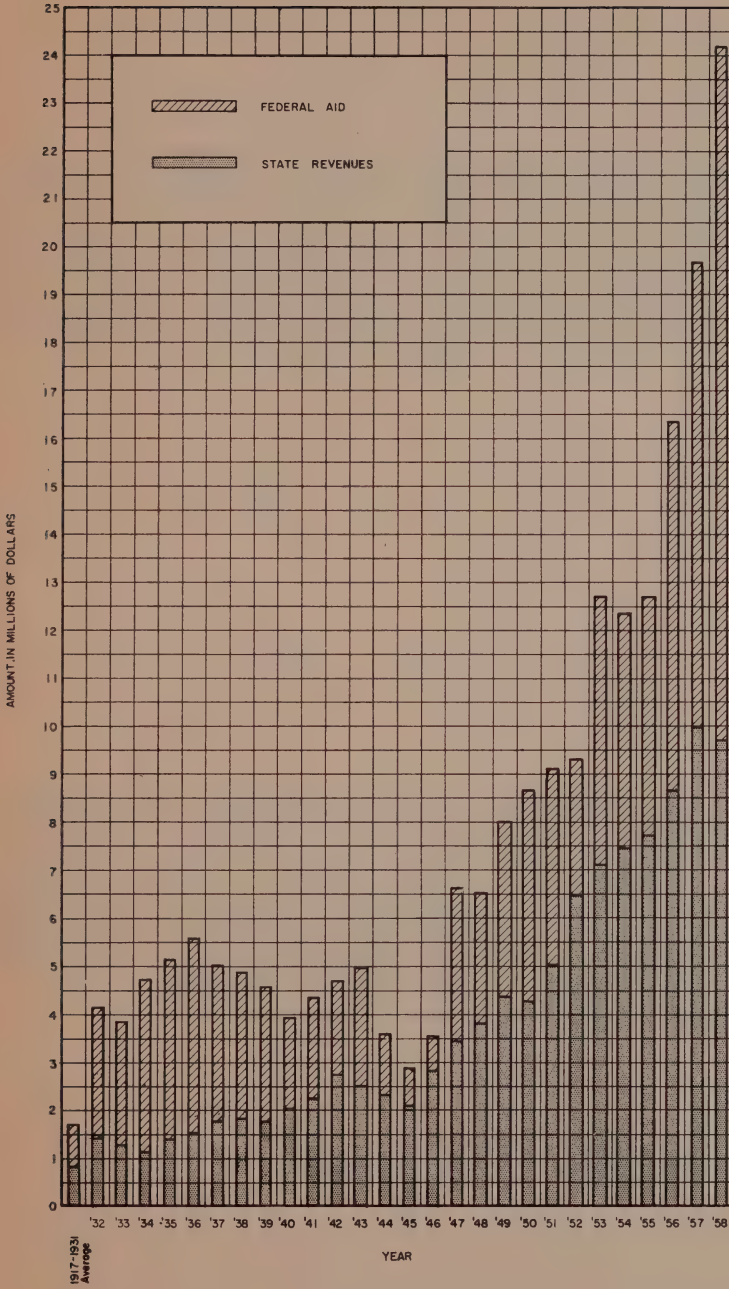


CHART 2

EXPENDITURES - TO DATE

EXPENDITURES - 1956 - 1958

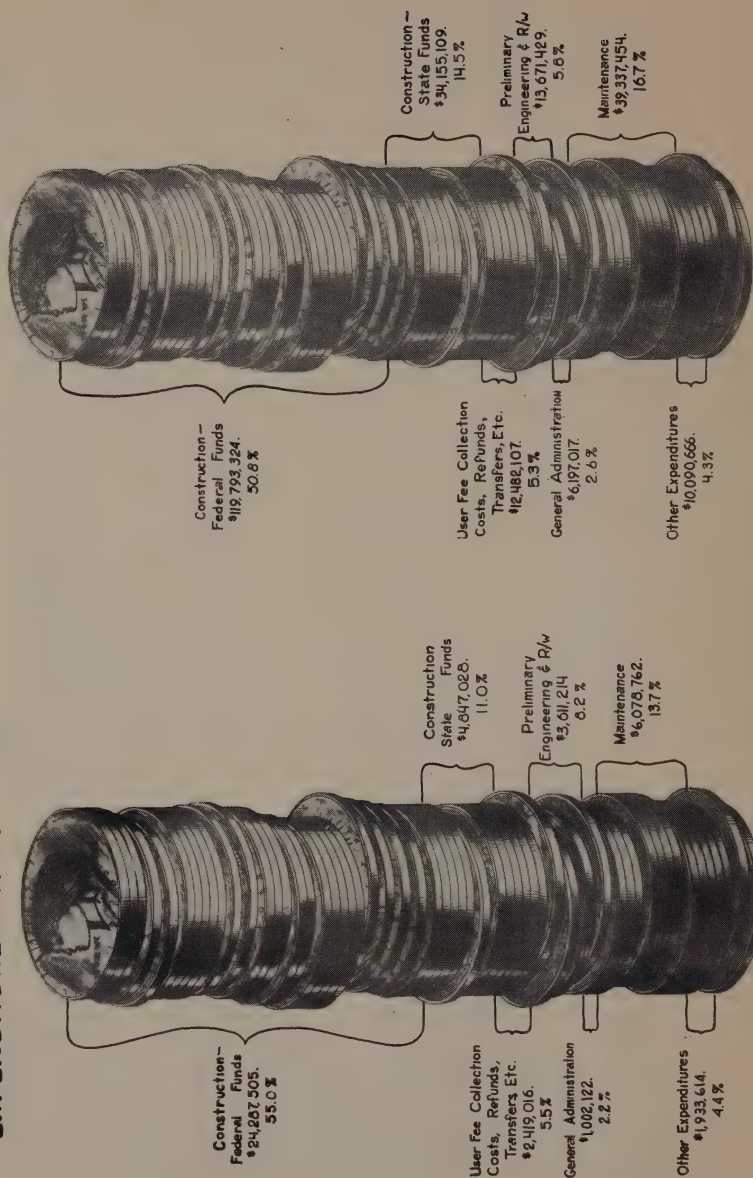
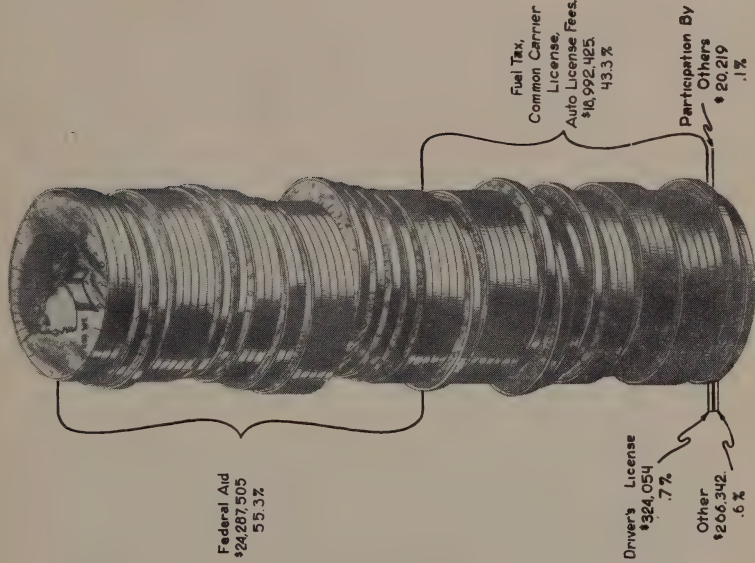


CHART 3

REVENUES - 1956-1958



REVENUES TO DATE

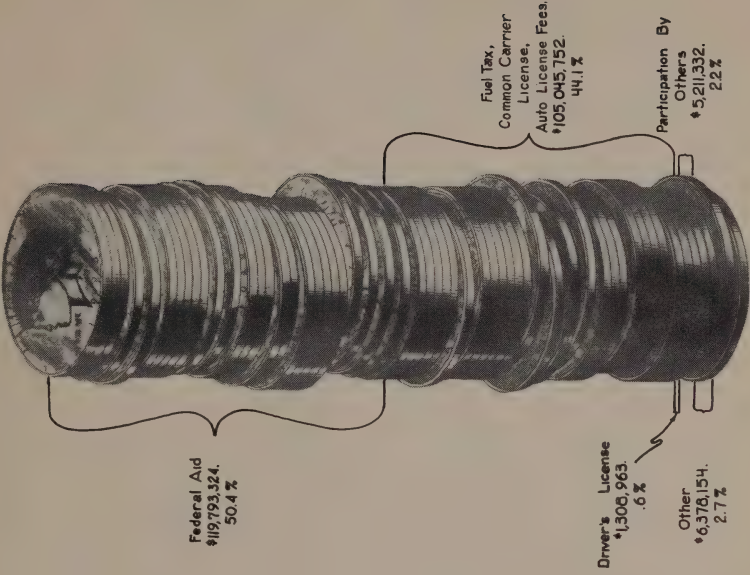


CHART 4

YEARLY EXPENDITURES BY FISCAL YEARS 1917-1958

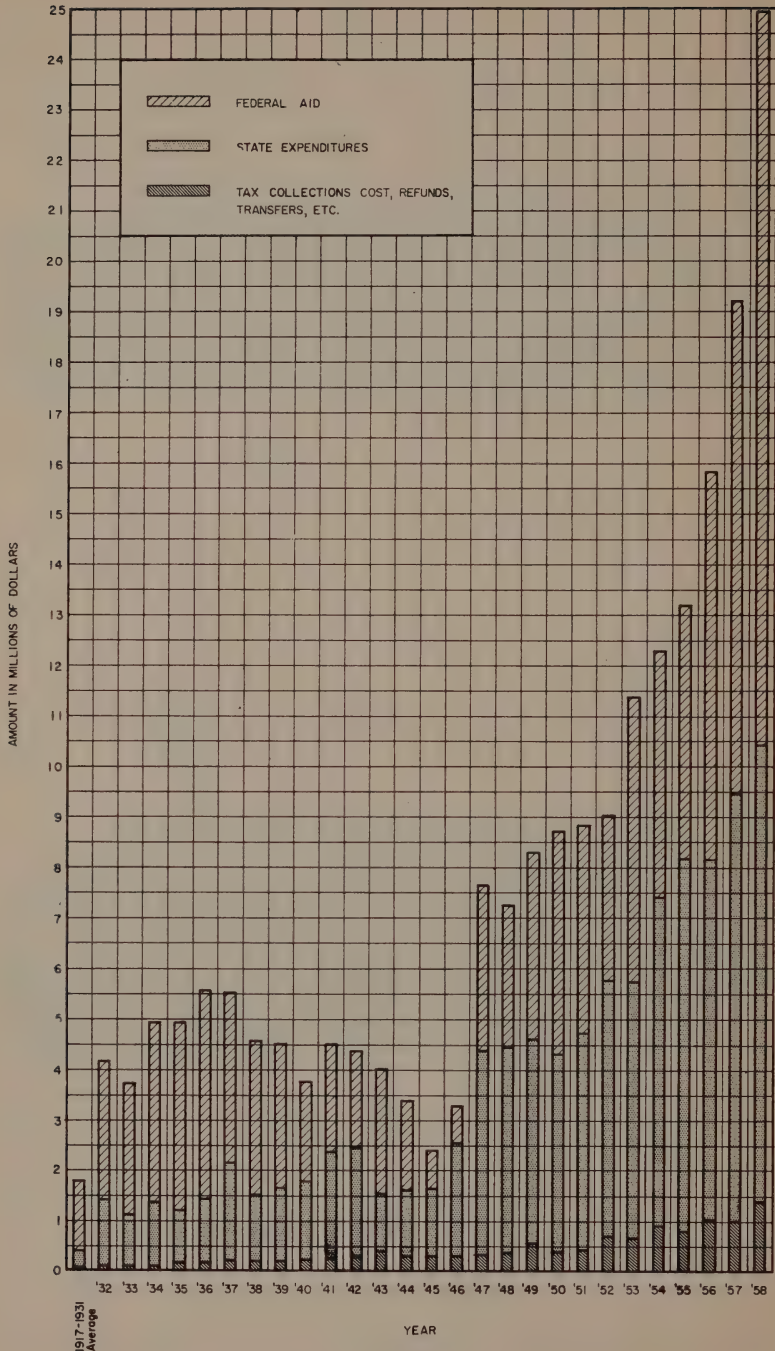


TABLE 3

STATEMENT OF REVENUES AND DISBURSEMENTS—1957-1958

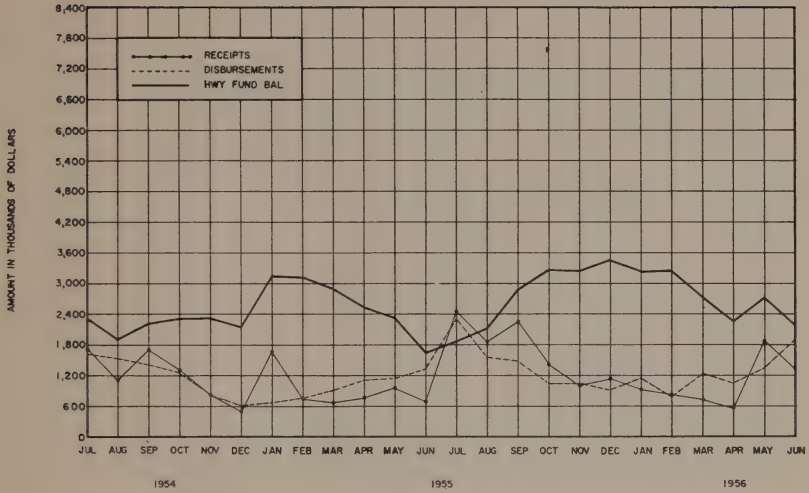
Item	1957	1958	Total	Percent
Receipts—				
Federal aid.....	\$9,757,664.98	\$14,529,839.93	\$24,287,504.91	55.34
Gasoline and use fuel				
tax (gross).....	6,304,461.57	6,132,067.75	12,436,529.32	28.33
Auto license fees.....	1,227,950.75	1,247,071.25	2,475,022.00	5.64
Common carrier license.....	2,061,899.98	2,018,974.12	4,080,874.10	9.30
Drivers' licenses.....	159,268.35	164,785.10	324,053.45	.74
Participation by others.....	45,321.14	.....	45,321.14	.10
Accounts receivable.....	121,885.81	119,354.25	241,240.06	.55
	\$19,678,452.58	\$24,212,092.40	\$43,890,544.98	100.00
Disbursements—				
Construction.....	\$12,178,093.90	\$16,266,427.02	\$28,444,520.92	64.38
Surveys, plans and				
right-of-way.....	1,610,407.80	2,000,805.75	3,611,213.55	8.17
Maintenance.....	2,768,347.06	3,310,414.60	6,078,761.66	13.76
Buildings.....	548,556.67	427,327.05	975,883.72	2.21
Equipment and plants.....	327,268.61	433,157.09	760,425.70	1.72
Administration.....	421,610.86	580,511.29	1,002,122.15	2.27
Research and				
investigation.....	290,492.92	399,518.65	690,011.57	1.56
Public Relations.....	9,089.18	24,384.80	33,473.98	.08
Highways and				
Parks magazine.....	23,440.09	56,649.69	80,089.78	.18
State road maps.....	1,793.62	35,968.37	37,761.99	.09
July traffic count.....	21,865.10	24,114.74	45,979.84	.10
Accounts receivable.....	141,349.01	144,100.39	285,449.40	.65
Gasoline and use fuel				
tax refunds.....	249,648.68	285,295.43	534,944.11	1.21
Gasoline and use fuel tax				
administration.....	35,863.30	48,573.05	84,436.35	.19
Common carrier license				
refunds.....	10,998.88	13,638.07	24,636.95	.06
Public Service				
Commission.....	57,622.50	36,916.00	94,538.50	.21
Highway Patrol.....	327,691.81	478,343.64	806,035.45	1.82
Drivers' License Division.....	90,838.67	157,335.92	248,174.59	.56
Motor Vehicle Division.....	110,063.77	184,579.88	294,643.65	.67
Motor Carrier Division.....	.....	38,584.00	38,584.00	.09
Department of Motor				
Vehicles.....	.....	7,573.00	7,573.00	.02
	\$19,225,042.43	\$24,954,218.43	\$44,179,260.86	100.00
Reconciliation with State Controller—				
Highway Balance, July 1, 1956.....			\$2,206,683.06	
Plus: Receipts.....			43,890,544.98	
Less: Disbursements.....			44,179,260.86	
Less: Transfer to Highway Revolving Fund.....			150,000.00	
Highway Balance, June 30, 1958.....			\$1,767,967.18	
Plus: June 1958 lists included in above paid				
in July 1958 by State Controller.....			83,648.28	
State Controller's Balance, June 30, 1958.....			\$1,851,615.46	
Note: Highway Revolving Fund—\$250,000.00 by Legislative Authority.				

TABLE 4
STATUS OF STATE HIGHWAY FUND

Month ending	1956			
	Vouchered amount not paid	Highway balance	Total est. fund balance	Controller's balance
July.....	\$220,201.60	\$2,565,017.68	\$2,785,219.28	\$4,322,641.98
August.....	1,256,150.60	1,472,792.35	2,728,942.95	3,246,296.31
September.....	299,199.86	3,615,502.07	3,914,701.93	5,039,891.03
October.....	307,913.83	3,636,482.71	3,944,396.54	4,611,676.63
November.....	234,042.30	3,564,593.50	3,798,635.80	4,426,660.91
December.....	519,623.64	2,765,021.97	3,284,645.61	3,673,642.34
1957				
January.....	\$485,214.19	\$2,814,543.30	\$3,299,757.49	\$3,854,375.73
February.....	1,327,285.14	2,189,636.01	3,516,921.15	3,064,909.55
March.....	1,283,240.68	2,161,871.58	3,445,112.26	3,320,421.78
April.....	1,306,951.11	1,416,514.27	2,723,465.38	2,731,149.62
May.....	1,296,193.61	1,411,186.71	2,707,380.32	2,725,772.77
June.....	1,238,772.78	2,660,093.21	3,898,865.99	2,640,794.59
July.....	204,834.87	2,718,898.51	2,923,733.38	2,860,727.10
August.....	171,427.12	1,871,098.65	2,042,525.77	2,075,916.37
September.....	743,574.78	2,484,835.58	3,228,410.36	2,637,428.57
October.....	1,900,075.57	2,067,669.24	3,967,744.81	2,423,501.85
November.....	308,823.34	3,068,089.56	3,376,912.90	3,342,127.69
December.....	308,823.34	3,206,304.88	3,515,128.22	3,503,431.80
1958				
January.....	\$374,298.34	\$2,754,659.03	\$3,128,957.37	\$2,829,008.48
February.....	413,089.28	2,165,853.68	2,578,942.96	2,350,240.98
March.....	648,075.10	1,994,441.30	2,642,516.40	2,038,008.14
April.....	653,998.60	2,063,333.05	2,717,331.65	2,254,764.32
May.....	533,548.89	1,964,244.70	2,497,793.59	2,164,453.69
June.....	230,107.19	1,767,967.18	1,998,074.37	1,851,615.46

CHART 5

RECEIPTS, DISBURSEMENTS & HIGHWAY FUND BALANCE
1954-1956



RECEIPTS, DISBURSEMENTS & HIGHWAY FUND BALANCE
1956-1958

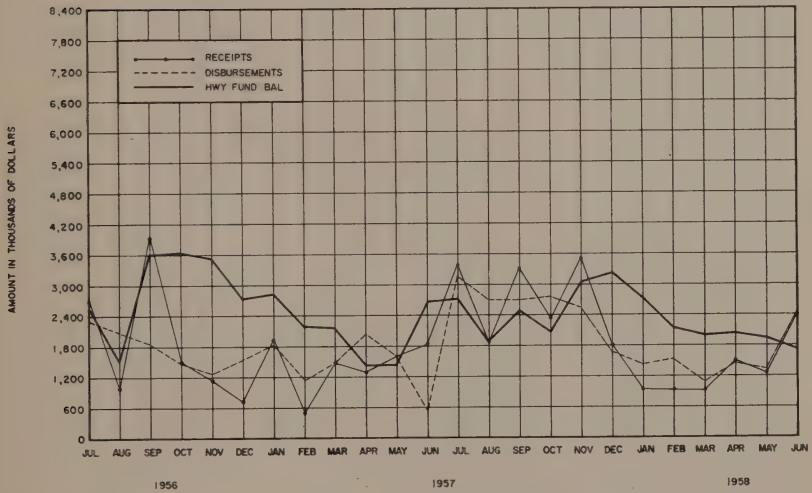


TABLE 5
NEVADA'S SHARE OF FEDERAL AID ALLOTMENTS
1917-1949

Regular.....	\$36,566,748.63
Secondary.....	7,214,690.00
Urban.....	181,062.00
Public Lands.....	4,204,149.00
Emergency.....	1,575,756.00
National Recovery.....	6,848,273.00
Advance.....	904,961.83
Advance Engineering.....	127,539.00
Strategic, Net.....	318,847.00
Works Program—.....	
Highway.....	2,243,074.00
Grade Crossing Elimination.....	1,137,260.00
Grade Crossings.....	683,639.00
Subtotal.....	\$62,005,999.46
1949-1960	
1949 None.....	
1950 Regular.....	\$2,564,998.00
1950 Secondary Highways.....	1,718,707.00
1950 Urban.....	53,853.00
1951 Regular.....	2,562,973.00
1951 Secondary Highways.....	1,717,361.00
1951 Urban.....	53,853.00
1952 Regular.....	2,885,661.00
1952 Secondary Highways.....	1,928,291.00
1952 Urban.....	92,917.00
1953 Regular.....	2,863,524.00
1953 Secondary Highways.....	1,913,466.00
1953 Urban.....	92,199.00
1954 Regular.....	3,174,465.00
1954 Secondary Highways.....	2,121,392.00
1954 Urban.....	102,203.00
1954 Federal Lands.....	400,000.00
1954 Interstate.....	322,835.00
1955 Regular.....	3,179,310.00
1955 Secondary Highways.....	2,124,823.00
1955 Urban.....	102,729.00
1955 Interstate.....	323,336.00
1956 Regular.....	4,077,521.00
1956 Secondary Highways.....	2,725,122.00
1956 Urban.....	131,752.00
1956 Interstate.....	1,785,146.00
1956 Federal Lands.....	395,058.32
1957 Regular.....	4,067,717.00
1957 Regular.....	706,600.00
1957 Secondary Highways.....	2,718,588.00
1957 Secondary Highways.....	472,305.00
1957 Urban.....	132,088.00
1957 Urban.....	23,939.00
1957 Interstate.....	1,784,039.00
1957 Interstate.....	10,440,057.00
1958 Regular.....	4,804,877.00
1958 Secondary Highways.....	3,211,672.00
1958 Urban.....	162,785.00
1958 Interstate.....	17,748,097.00
1959 Regular.....	4,909,104.00
1959 Secondary Highways.....	3,281,450.00
1959 Urban.....	166,734.00
1959 Interstate.....	20,744,054.00
1959 Interstate.....	2,084,830.00
1959 D-Fund.....	3,839,673.00
1960 Regular.....	5,061,574.00
1960 Secondary Highways.....	3,383,408.00
1960 Urban.....	171,498.00
1960 Interstate.....	13,009,625.00
Subtotal—1917-1960.....	\$204,344,208.78
Other Federal Funds Utilized—.....	
Defense Act Access Funds.....	\$1,958,757.90
Postwar Access Funds.....	692,811.90
Flight Strips (Special).....	637,513.04
Flight Strips (Regular).....	569,452.02
Subtotal.....	\$3,858,534.86
Grand total.....	\$208,202,743.64

TABLE 6

**ESTIMATE OF ANTICIPATED REVENUES AVAILABLE FOR HIGHWAY
USE FOR 1959 AND 1960 COMPARED TO ACTUAL
REVENUES OF 1958**

Item	Actual 1957-1958	Estimated 1958-1959	Estimated 1959-1960
Motor vehicle fuel tax.....	\$6,132,067.75	\$6,551,134.00	\$6,747,668.00
Auto license fees.....	1,247,071.25	1,296,954.00	1,348,832.00
Common carrier licenses.....	2,018,974.12	2,059,354.00	2,100,541.00
Drivers' license fees.....	164,785.10	168,081.00	171,442.00
Federal aid.....	14,529,839.93	24,931,910.00	30,797,350.00
Miscellaneous.....	119,354.25	.....	.....
Totals.....	\$24,212,092.40	\$35,007,433.00	\$41,165,833.00

TABLE 7

**ESTIMATE OF PROPOSED EXPENDITURES FOR 1959
AND 1960 FISCAL YEARS COMPARED TO ACTUAL
EXPENDITURES FOR 1958**

Item	FEDERAL		
	Actual 1957-1958	Estimated 1958-1959	Estimated 1959-1960
Right-of-way.....	\$347,683.00	\$690,000	\$830,800
Preliminary engineering.....	350,000.00	1,575,000	1,653,000
Construction engineering.....	1,262,432.65	2,088,000	2,610,000
Construction.....	12,276,643.56	20,190,000	25,269,200
Research and investigation.....	293,080.72	388,910	434,350
Subtotals.....	\$14,529,839.93	\$24,931,910	\$30,797,350
STATE			
Right-of-way.....	\$123,953.73	\$220,000	\$337,900
Preliminary engineering.....	1,650,805.75	525,000	552,000
Construction engineering.....	216,333.44	312,000	390,000
Construction.....	2,039,380.64	2,900,000	3,562,100
Research and investigation.....	106,437.93	110,000	115,000
Traffic studies (July count).....	24,114.74	25,320	26,750
General maintenance.....	3,310,414.60	3,475,935	3,649,732
Maintenance buildings.....	386,077.05	405,381	425,650
State Office Building.....	41,250.00	.....	.....
Reno plant and equipment.....	433,157.09	454,815	477,556
General administration.....	580,511.29	609,537	640,014
Public relations.....	24,384.80	25,604	26,884
Official road map.....	35,968.37	37,767	39,655
Highways and Parks Magazine.....	56,649.69	59,482	62,456
Department of Motor Vehicles.....	15,935.00	50,966	48,500
Motor Vehicle Division.....	184,579.88	144,865	165,000
Motor Carrier Division.....	38,584.00	33,365	37,500
Drivers' License Division.....	157,335.92	121,024	140,000
Highway Patrol.....	506,897.64	362,716	435,000
Gas and use fuel administration.....	48,573.05	50,503	50,000
Gas, use fuel and carrier refunds.....	298,933.50	290,000	290,000
Accounts receivable.....	144,100.39	150,000	150,000
Subtotals.....	\$10,424,378.50	\$10,364,280	\$11,621,697
Total—all funds.....	\$24,954,218.43	\$35,296,190	\$42,419,047

917-1958

Year	Miscellaneous	Totals	Disbursements (From table 2)	Grand totals
1917			\$36,985.07	\$36,985.07
1918			75,327.59	75,327.59
1919	\$11,629.46	\$27,745.04	592,118.68	619,863.72
1920		48,204.69	1,495,782.06	1,543,986.75
1921	6,946.89	132,248.36	1,144,891.38	1,277,139.74
1922	1,530.82	3,176.47	1,449,349.14	1,452,525.61
1923		83,088.96	2,251,162.34	2,334,251.30
1924		45,652.83	3,115,375.76	3,161,028.59
1925		36,094.32	2,825,661.29	2,861,755.61
1926		42,285.05	1,438,584.75	1,480,869.80
1927		47,004.07	1,945,945.16	1,992,949.23
1928		40,522.67	1,791,213.43	1,831,736.10
1929		30,794.54	2,184,191.97	2,214,986.51
1930	29,721.65	67,738.13	2,472,122.50	2,539,860.63
1931	27,912.50	46,709.07	1,483,856.18	1,530,565.25
1932	39,551.25	78,218.61	4,126,638.29	4,204,856.90
1933	31,600.00	71,067.72	3,656,536.20	3,727,603.92
1934	28,178.75	72,561.22	4,893,976.73	4,966,537.95
1935	23,857.50	141,815.66	4,822,219.74	4,964,035.40
1936	5,378.50	145,574.46	5,395,453.18	5,541,027.64
1937	21,902.75	182,136.99	5,333,683.48	5,515,820.47
1938	8,793.75	171,141.95	4,439,252.86	4,610,394.81
1939	8,305.02	158,867.25	4,367,342.46	4,526,209.71
1940	6,966.34	187,923.79	3,591,333.69	3,779,257.48
1941		221,896.51	4,287,077.07	4,508,973.58
1942		305,915.60	4,105,944.79	4,411,860.39
1943		407,063.32	3,628,911.28	4,035,974.60
1944		311,786.91	3,109,074.60	3,420,861.51
1945		284,169.51	2,142,170.68	2,426,340.19
1946		300,268.19	3,021,063.12	3,321,331.31
1947		348,724.26	7,297,857.82	7,646,582.08
1948		418,888.77	6,831,837.46	7,250,726.23
1949		588,381.01	7,720,096.66	8,308,477.67
1950		404,010.56	8,320,671.76	8,724,682.32
1951		439,755.39	8,390,101.20	8,829,856.59
1952		701,872.00	8,374,929.86	9,076,801.86
1953		676,481.11	10,737,772.71	11,414,253.82
1954		926,080.82	11,385,090.18	12,311,171.00
1955		811,302.99	12,393,817.89	13,205,120.88
1956		1,055,921.85	14,809,333.30	15,865,255.15
1957		1,024,076.62	18,200,965.81	19,225,042.43
1958		1,394,939.38	23,559,279.05	24,954,218.43
Totals	252,275.18	\$12,482,106.65	\$223,244,999.17	\$235,727,105.82

TABLE 8

HISTORICAL RECORD OF ADMINISTRATIVE AND TAX COLLECTION COSTS AND REFUNDS, 1917-1958

Year	Fuel tax administration	Fuel tax refunds	Public Service Commission	Department of Motor Vehicles	Drivers' licenses	Highway Patrol	Common carrier refunds	Accounts receivable	Miscellaneous	Totals	Disbursements (From table 2)	Grand totals
1917											\$36,985.07	\$36,985.07
1918											75,327.59	75,327.59
1919								\$16,115.58	\$11,629.46	\$27,745.04	592,118.68	619,863.72
1920								48,204.69		48,204.69	1,495,782.06	1,543,986.75
1921								125,301.47	6,946.89	132,248.36	1,144,891.38	1,277,139.74
1922								1,645.65	1,530.82	3,176.47	1,449,349.14	1,452,525.61
1923								83,088.96		83,088.96	2,251,162.34	2,334,251.30
1924						\$10,445.11		35,207.72		45,652.83	3,115,375.76	3,161,028.59
1925						12,583.02		23,511.30		36,094.32	2,825,661.29	2,861,755.61
1926						15,949.23		26,335.82		42,285.05	1,438,584.75	1,480,869.80
1927						14,128.40		32,875.67		47,004.07	1,945,945.16	1,992,949.23
1928						6,219.20		34,303.47		40,522.67	1,791,213.43	1,831,736.10
1929						7,741.24		23,053.30		30,794.54	2,184,191.97	2,214,986.51
1930						8,504.29		29,512.19	29,721.65	67,738.13	2,472,122.50	2,539,860.63
1931						11,584.36		7,212.21	27,912.50	46,709.07	1,483,856.18	1,530,565.25
1932			\$4,041.83			11,831.55		22,793.98	39,551.25	78,218.61	4,126,638.29	4,204,856.90
1933			3,869.78			12,413.97		23,183.97	31,600.00	71,067.72	3,656,536.20	3,727,603.92
1934			5,917.51			22,336.62		16,128.34	28,178.75	72,561.22	4,893,976.73	4,966,537.95
1935	\$443.47	\$27,960.92	6,362.03			23,554.18	\$581.00	59,056.56	23,857.50	141,815.66	4,822,219.74	4,964,035.40
1936	3,064.69	84,323.70	10,798.01			24,918.05	454.00	16,637.51	5,378.50	145,574.46	5,395,453.18	5,541,027.64
1937	4,454.50	81,910.33	11,256.55			28,573.51	13,756.12	20,283.23	21,902.75	182,136.99	5,338,683.48	5,515,820.47
1938	3,750.83	72,208.36	11,449.27			36,344.76	790.56	37,804.42	8,793.75	171,141.95	4,439,252.86	4,610,394.81
1939	2,657.89	85,462.93	11,959.51			20,647.50	1,351.35	28,483.05	8,305.02	158,867.25	4,367,342.46	4,526,209.71
1940	6,087.39	93,421.13	11,672.99			41,151.06	2,810.58	25,814.30	6,966.34	187,923.79	3,591,333.69	3,779,257.48
1941	8,730.56	122,367.19	23,336.31		\$8,507.89	32,697.55	540.15	25,716.86		221,896.51	4,287,077.07	4,508,973.58
1942	11,084.48	154,901.43	52,354.81		62,074.55		413.54	25,086.79		305,915.60	4,105,944.79	4,411,860.39
1943	14,806.49	267,276.02	48,537.23		33,023.42		814.15	42,606.01		407,063.32	3,628,911.28	4,035,974.60
1944	13,575.02	169,213.73	47,646.99		47,646.99		37.70	33,544.66		311,786.91	3,109,074.60	3,420,861.51
1945	12,464.80	150,777.17	45,487.53		37,124.35		4,609.50	33,706.16		284,169.51	2,142,170.68	2,426,340.19
1946	13,404.14	164,953.82	50,999.45		39,378.68		552.56	30,979.54		300,263.19	3,021,063.12	3,321,331.31
1947	15,840.86	169,719.25	59,286.59		60,451.54		864.85	42,561.17		348,724.26	7,297,857.82	7,646,582.08
1948	18,192.54	188,841.68	64,334.56		66,773.01		928.30	79,818.68		418,888.77	6,831,837.46	7,250,726.23
1949	20,845.50	201,843.55	76,218.87		67,204.89		312.66	221,955.54		588,381.01	7,720,096.66	8,308,477.67
1950	17,024.14	149,078.21	40,926.18		43,866.03	112,860.02	849.43	39,406.55		404,010.56	8,320,671.76	8,724,682.32
1951	14,595.02	163,558.05	47,850.58		26,316.01	142,701.08	165.50	44,569.15		439,755.39	8,390,101.20	8,829,856.59
1952	20,127.62	194,113.66	89,721.27		68,108.74	169,988.11	949.00	153,863.60		701,872.00	8,374,929.86	9,076,801.86
1953	22,884.24	220,939.95	101,661.31		58,244.82	174,791.66	155.50	97,803.63		676,481.11	10,737,772.71	11,414,253.82
1954	44,272.74	213,817.53	180,837.00		88,070.00	313,254.00	795.70	85,033.85		926,080.82	11,385,090.18	12,311,171.00
1955	27,175.25	218,001.54	116,894.20		73,230.51	310,250.15	8,096.05	57,655.29		811,302.99	12,393,817.89	13,205,120.88
1956	44,894.94	219,612.87	189,926.00		101,463.90	402,423.50	7,163.22	90,437.42		1,055,921.85	14,809,333.30	15,865,255.15
1957	35,863.30	249,648.68	167,686.27		90,838.67	327,691.81	10,998.88	141,349.01		1,024,076.62	18,200,965.81	19,225,042.43
1958	48,573.05	285,295.43	221,495.88	\$46,157.00	157,335.92	478,343.64	13,638.07	144,100.39		1,394,939.38	23,559,279.05	24,954,218.43
Totals	\$424,813.46	\$3,949,247.13	\$1,702,528.51	\$46,157.00	\$1,129,781.74	\$2,773,927.57	\$71,628.37	\$2,131,747.69	\$252,275.18	\$12,482,106.65	\$223,244,999.17	\$235,727,105.82

TABLE 9
HISTORICAL RECORD—STATE'S SHARE TO TOTAL
CONSTRUCTION COSTS—1937-1958

Year	Total construction costs	Averages	State's share of construction costs	Averages	State's share of construction (percent)
1937.....	\$3,851,421		\$513,777		13.3
1938.....	3,295,887		215,119		6.5
1939.....	3,164,717		308,980		9.8
1940.....	2,334,590		373,526		16.0
1941.....	2,766,626		651,046		23.5
Subtotals.....	\$15,413,241	\$3,082,648	\$2,062,448	\$412,489	13.4
1942.....	\$2,371,966		\$420,375		17.7
1943.....	2,670,425		198,912		7.4
1944.....	2,106,608		312,818		14.8
1945.....	951,828		169,221		17.7
1946.....	1,451,620		684,510		47.2
Subtotals.....	\$9,552,447	\$1,910,489	\$1,785,836	\$357,167	18.7
1947.....	\$4,884,494		\$1,679,782		34.4
1948.....	4,598,673		1,837,296		40.0
1949.....	5,057,880		1,393,520		25.9
1950.....	5,647,542		1,281,327		22.7
1951.....	5,464,220		1,396,215		25.6
Subtotals.....	\$25,652,809	\$5,130,561	\$7,588,140	\$1,517,628	21.9
1952.....	\$4,927,939		\$1,605,641		32.6
1953.....	7,162,662		1,478,321		20.6
1954.....	7,019,593		2,116,776		30.2
1955.....	7,941,219		2,920,129		36.8
1956.....	9,476,780		1,780,898		18.8
Subtotals.....	\$36,528,193	\$7,305,638	\$9,901,765	\$1,980,353	27.1
1957.....	\$12,468,587		\$2,710,922		21.7
1958.....	16,665,946		2,136,106		12.8
Subtotals.....	\$29,134,533	\$14,567,266	\$4,847,028	\$2,423,514	16.6
Totals.....	\$116,281,223		\$26,185,217		22.5

TABLE 10
FEDERAL AID FUNDS EXPENDED BY SYSTEM TYPES, 1952-1958

Fiscal year	Interstate	Primary	Secondary
1952.....	\$52,502.46	\$1,780,978.20	\$1,353,967.97
1953.....	570,733.97	2,378,332.68	1,555,264.09
1954.....	364,380.37	2,464,428.13	1,921,807.15
1955.....	563,277.93	2,994,717.19	1,185,885.90
1956.....	137,159.00	4,512,831.05	2,516,695.39
1957.....	873,015.71	5,441,930.72	3,076,699.75
1958.....	3,300,565.00	6,158,119.34	4,778,074.87
Totals.....	\$5,861,634.44	\$25,731,337.31	\$16,388,395.12

Fiscal year	Federal lands	Other	Total
1952.....		\$134,848.89	\$3,322,297.52
1953.....	\$376,856.26	803,153.61	5,684,340.61
1954.....	51,814.00	100,387.15	4,902,816.80
1955.....	219,994.00	57,214.93	5,021,089.95
1956.....	119,997.00	409,199.21	7,695,881.65
1957.....	55,067.32	310,951.48	9,757,664.98
1958.....		293,080.72	14,529,839.93
Totals.....	\$823,728.58	\$2,108,835.99	\$50,913,931.44

TABLE 11
MAINTENANCE COSTS—1918-1958

Year	Snow removal	MAINTENANCE—		Mileage maintained	Average Cost Per Mile	
		General	Total		Total maintenance	Excluding snow removal
1918-1922		\$185,848.90	\$185,848.90	\$442.98	\$249.95	\$221.30
1923	\$12,695.38	98,029.49	110,724.87	765.23	160.46	159.30
1924	884.53	121,904.07	122,788.60	903.90	238.04	236.41
1925	1,479.13	213,689.57	215,168.70	1,213.43	252.92	251.43
1926	1,803.43	305,096.09	306,899.52	1,445.08	237.63	231.94
1927	8,228.95	335,170.33	343,399.28	1,680.73	213.75	211.87
1928	3,167.50	356,094.38	359,262.08	1,875.16	222.95	214.32
1929	16,172.05	401,893.03	418,065.08	1,805.43	262.80	252.59
1930	19,466.28	481,286.18	500,752.46	2,061.34	146.10	143.82
1931	4,711.45	296,453.19	301,166.64	2,113.02	262.65	253.07
1932	83,652.96	534,744.15	618,397.11	2,151.64	263.45	224.64
1933	8,357.01	483,343.50	491,700.51	2,287.37	219.78	216.18
1934	26,574.73	430,386.59	456,961.32	2,524.71	244.69	233.37
1935	50,918.37	234,777.19	285,695.56	2,636.68	234.35	235.17
1936	131,066.03	714,967.32	846,033.35	2,977.52	353.60	265.12
1937	59,468.88	696,836.38	756,305.26	2,602.00	329.01	251.92
1938	71,681.61	759,197.99	830,879.60	2,608.49	329.32	247.56
1939	42,403.61	720,671.72	763,075.33	2,941.35	321.42	245.98
1940	87,337.42	771,564.79	858,902.21	3,011.77	351.46	247.78
1941	57,008.71	761,433.15	818,480.57	3,047.80	328.01	197.25
1942	60,386.92	685,093.28	745,480.21	3,084.67	321.08	215.49
1943	94,585.25	608,755.60	703,340.85	3,081.74	276.47	243.77
1944	103,521.25	670,257.01	773,778.26	3,093.24	321.23	290.05
1945	104,232.71	750,972.18	855,194.89	3,073.09	357.07	328.81
1946	102,052.10	949,369.12	1,051,422.22	3,421.75	367.07	328.81
1947	368,137.41	1,125,112.12	1,256,025.61	3,421.75	357.07	328.81
1948	170,748.71	1,060,946.77	1,229,074.18	3,565.96	407.38	364.20
1949	122,757.57	1,298,730.35	1,469,479.06	3,750.09	432.07	393.33
1950	603,200.27	1,497,539.54	1,620,297.11	3,770.60	538.36	438.38
1951	203,088.17	1,652,974.12	2,256,174.39	3,899.96	552.46	503.65
1952	245,156.74	1,964,216.17	2,158,452.76	3,915.47	642.41	590.54
1953	208,088.17	2,312,250.78	2,515,338.95	3,952.77	609.15	521.82
1954	203,088.17	2,062,671.30	2,407,828.04	4,026.56	685.37	593.57
1955	263,686.02	2,386,026.17	2,759,702.90	4,166.47	664.44	601.15
1956	263,686.02	2,504,661.04	2,768,347.06	4,303.89	769.17	669.10
1957	430,682.84	2,504,661.04	2,935,343.88			
1958		2,879,731.76	3,310,414.60			

CHART 6

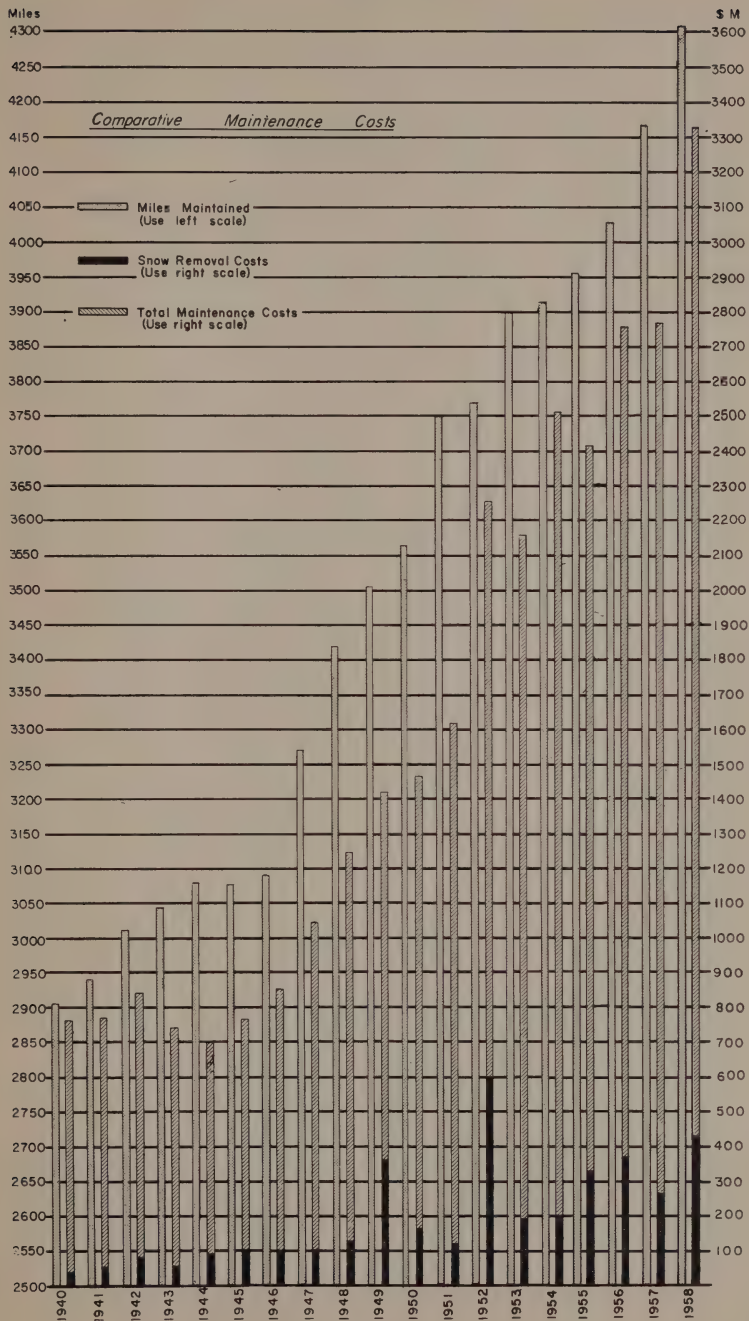


TABLE 12

**EXPENDITURES FOR VARIOUS MAINTENANCE OPERATIONS
ON ALL ROADS MAINTAINED BY THE DEPARTMENT
1957-1958**

	Fiscal year 1957	Fiscal year 1958	Total	Percent
Routine roadway operations—				
Patching holes and ruts, spot scaling.....	\$510,056.44	\$605,147.08	\$1,115,203.52	18.35
Dragging, blading, reshaping.....	30,043.85	26,282.79	56,326.64	.93
Filling, trimming, expansion joints, cracks.....	166.02	5,980.78	6,146.80	.10
Applying light seal and blotter or chips.....	123,828.31	214,377.59	338,205.90	5.56
Subtotals.....	\$664,094.62	\$851,788.24	\$1,515,882.86	24.94
Special roadway operations—				
Applying dust palliatives.....	\$1,596.36	\$94.92	\$1,691.28	.03
Replacement of gravel, crushed stone.....	3,163.06	433.16	3,596.22	.06
Reprocessing bituminous surface.....	93,193.94	56,639.25	149,833.19	2.46
Bituminous surface treatment.....	149,317.98	149,014.87	298,332.85	4.91
Heavy chips and seal.....	52,945.72	99,853.81	152,799.53	2.51
Subtotals.....	\$300,217.06	\$306,036.01	\$606,253.07	9.97
Shoulders and approaches—				
Shoulder patch and minor washouts.....	\$256,422.31	\$277,615.83	\$534,038.14	8.79
Bituminous shoulder treatment.....	39,769.01	66,689.86	106,458.87	1.75
Construct new approaches.....	7,189.21	16,521.30	23,710.51	.39
Reprocessing bituminous shoulders.....	3,866.23	55,493.59	59,359.82	.98
Subtotals.....	\$307,246.76	\$416,320.58	\$723,567.34	11.91
Roadside and drainage—				
Repair of cuts, fills, slopes.....	\$187,764.49	\$162,632.78	\$350,397.27	5.76
Cleaning, retrenching drains.....	133,560.16	149,219.53	282,779.69	4.65
Removal of weeds and debris.....	332,634.26	317,125.54	649,759.80	10.69
Landscaping roadsides.....	5,146.93	10,150.81	15,297.74	.26
Maintenance of sidewalks, dikes.....	36,058.62	72,770.60	108,829.22	1.79
Halogeton control.....	755.42	755.42	755.42	.01
Subtotals.....	\$695,919.88	\$711,899.26	\$1,407,819.14	23.16
Traffic services—				
Repair to signs, safety devices.....	\$215,659.06	\$234,505.65	\$450,164.71	7.40
Removal of advertising signs.....	735.80	285.46	1,021.26	.02
Traffic lane and center striping.....	138,602.52	125,764.70	264,367.22	4.35
Maintenance of guardrail.....	27,503.23	17,220.77	44,724.00	.74
Highway and bridge lighting.....	1,821.80	2,676.62	4,498.42	.07
Maintenance of roadside rests.....	18,879.45	27,311.09	46,190.54	.76
Pedestrian crossing markings.....	7,131.00	14,027.13	21,158.13	.35
Patrolling.....	47,187.40	61,965.08	109,152.48	1.80
Subtotals.....	\$457,520.26	\$483,756.50	\$941,276.76	15.49
Snow, ice and sand control—				
Snow fence and markers.....	\$22,541.51	\$28,103.40	\$50,644.91	.83
Removal of snow and ice.....	182,131.36	335,592.15	517,723.51	8.52
Sanding, salting icy surfaces.....	55,751.30	63,387.74	119,139.04	1.96
Open waterways and drains.....	3,261.85	3,599.55	6,861.40	.11
Removal of sand drifts.....	2,846.43	1,861.87	4,708.30	.08
Maintain road blockades.....	346.00	286.94	632.94	.01
Subtotals.....	\$266,878.45	\$432,831.65	\$699,710.10	11.51

TABLE 12—Continued

Structures—	Fiscal year 1957	Fiscal year 1958	Total	Percent
Cleaning, opening channels.....	\$2,312.74	\$4,228.80	\$6,541.54	.11
Repairs to structures.....	1,729.86	3,159.90	4,889.76	.08
Painting structures.....	2,153.63	1,757.10	3,910.73	.06
Maintaining pumping plants.....	2,221.09	1,618.56	3,839.65	.06
Bridge and culvert inspections.....	2,192.41	2,574.07	4,766.48	.08
Subtotals.....	\$10,609.73	\$13,338.43	\$23,948.16	.39
Special maintenance, fire, flood, etc.....	\$37,795.63	\$48,171.15	\$85,966.78	1.41
Subtotals.....	\$37,795.63	\$48,171.15	\$85,966.78	1.41
Total direct expenditures.....	\$2,740,282.39	\$3,264,141.82	\$6,004,424.21	98.78
Maintenance administration—Headquarters.....	28,064.67	46,272.78	74,337.45	1.22
Total for fiscal year.....	\$2,768,347.06	\$3,310,414.60	\$6,078,761.66	100.00
Total miles maintained.....	4,166.467	4,303.885		
Average cost per mile (Includes snow removal).....	\$664.44	\$769.17		
Average cost per mile (Excludes snow removal)....	\$601.15	\$669.10		

TABLE 13

CONSTRUCTION AND RECONSTRUCTION COMPLETED AND UNDER CONTRACT ON THE DESIGNATED STATE HIGHWAY SYSTEM AT THE CLOSE OF THE BIENNIUM

Type	Miles new construction completed during biennium	Miles reconstruction completed during biennium	Miles new construction under contract at close of biennium	Miles reconstruction under contract at close of biennium	Totals
Grading.....			45.521		5.521
Roadmix.....	227.097	² 61.212	¹ 123.059	11.199	422.567
Plantmix.....	122.803	² 213.402	27.786	94.266	358.257
Totals.....	249.900	274.614	156.366	105.465	786.345

¹Includes 0.627 miles construction with Forest Highway Funds by Bureau of Public Roads.

²Includes 5.065 miles construction with Forest Highway Funds by Bureau of Public Roads.

³Includes 15.487 miles construction with Indian Service Funds by Bureau of Public Roads.

⁴Includes 5.521 miles construction with Forest Highway Funds by Bureau of Public Roads.

⁵Includes 4.386 miles construction with Forest Highway Funds by Bureau of Public Roads.

TABLE 14

NUMBER AND SIZE OF CONTRACTS, TOTAL BID VALUES AND AVERAGE NUMBER OF BIDDERS

July 1, 1956 to June 30, 1958

Project volume.....	Up to \$50,000	\$50,000 to \$100,000	\$100,000 to \$250,000	\$250,000 to \$500,000	\$500,000 to \$1,000,000	Over \$1,000,000
Number of contracts.....	16	8	11	18	14	5
Total value.....	\$271,034	\$681,124	\$1,717,764	\$6,583,625	\$9,415,941	\$9,939,830
Average number of bidders per contract.....	4.6	5.5	5.3	6.4	6.2	8.6

SUMMARY

Number of contracts.....	72
Total bid values.....	\$28,609,318
Average number of bidders.....	5.8

TABLE 15
BRIDGE AND GRADE SEPARATION SUMMARY
Structures Built by State Highway Department

Type	Constructed or under construction as of June 30, 1956	Constructed during biennium or under construction June 30, 1958	Structures abandoned during biennium	Total as of June 30, 1958	Structures on highway system not built by State Highway Dept.	Total structures as of June 30, 1958
Plain concrete.....	4	0	0	4	1	5
Reinforced concrete.....	144	35	2	177	1	178
Structural steel.....	29	1	2	29	10	39
Timber.....	41	0	7	34	8	42
Composite structures (reinforced concrete and structural steel).....	11	0	0	11	0	11
Prestressed concrete.....	0	2	0	2	0	2
Totals.....	229	38	10	257	20	277
Total length of structures in feet.....	20,763	2,662	618	22,807	1,746	24,553
Average length of bridge in feet.....	91	70	62	89	87	89

TABLE 16
COST INDEX
AVERAGE CONTRACT PRICES

Year	Road excavation (Cubic yard)	Borrow (Cubic yard)	Type I gravel (Ton)	Type II gravel (Ton)	Liquid asphalt (Ton)	Plant mix surface (Ton)	Class AA concrete (Cubic yard)	Reinf. steel (Pound)	24-inch CMP (L. Ft.)	24-inch RCP (L. Ft.)	Composite index
1955 Average.....	\$0.388	\$0.219	\$0.660	\$0.869	\$31.97	\$2.64	\$61.17	\$0.120	\$5.55	\$6.86	100.0
1956											
1st quarter.....	.643	.247	.773	.808	35.85	2.53	86.66	.128	6.33	7.00	123.1
2d quarter.....	.421	.300	1.65	1.49	39.41	2.71	65.00	.140	6.50	7.00	130.2
3d quarter.....	.472	.344	.800	.785	35.31	2.48	77.71	.148	6.62	7.00	111.2
4th quarter.....	.440	.307	.953	.910	35.90	2.21	81.32	.151	6.11	7.00	110.4
1956 Average.....	.506	.300	.845	.893	39.86	2.48	78.98	.144	6.08	7.00	118.2
1957											
1st quarter.....	.374	.211	.685	.833	38.30	2.70	80.72	.132	6.82	6.47	105.5
2d quarter.....	.599	.240	.806	.962	39.60	3.12	95.87	.152	6.65	7.29	130.4
3d quarter.....	.603	.340	.792	.979	40.45	2.88	65.75	.153	6.69	7.29	128.7
4th quarter.....	.366	.307	.625	.880	41.13	3.25	74.47	.156	7.48	7.00	119.8
1957 Average.....	.562	.291	.751	.920	39.63	2.96	71.63	.147	6.72	6.88	124.3
1958											
1st quarter.....	.605	.226	.624	.736	36.21	2.59	68.86	.140	6.67	7.72	117.2
2d quarter.....	.399	.227	.861	.971	36.11	2.31	86.10	.174	6.59	7.00	108.0

CHART 7

STATE OF NEVADA
DEPARTMENT OF HIGHWAYS

PRICE INDEX
CONSTRUCTION COST
1955 = 100

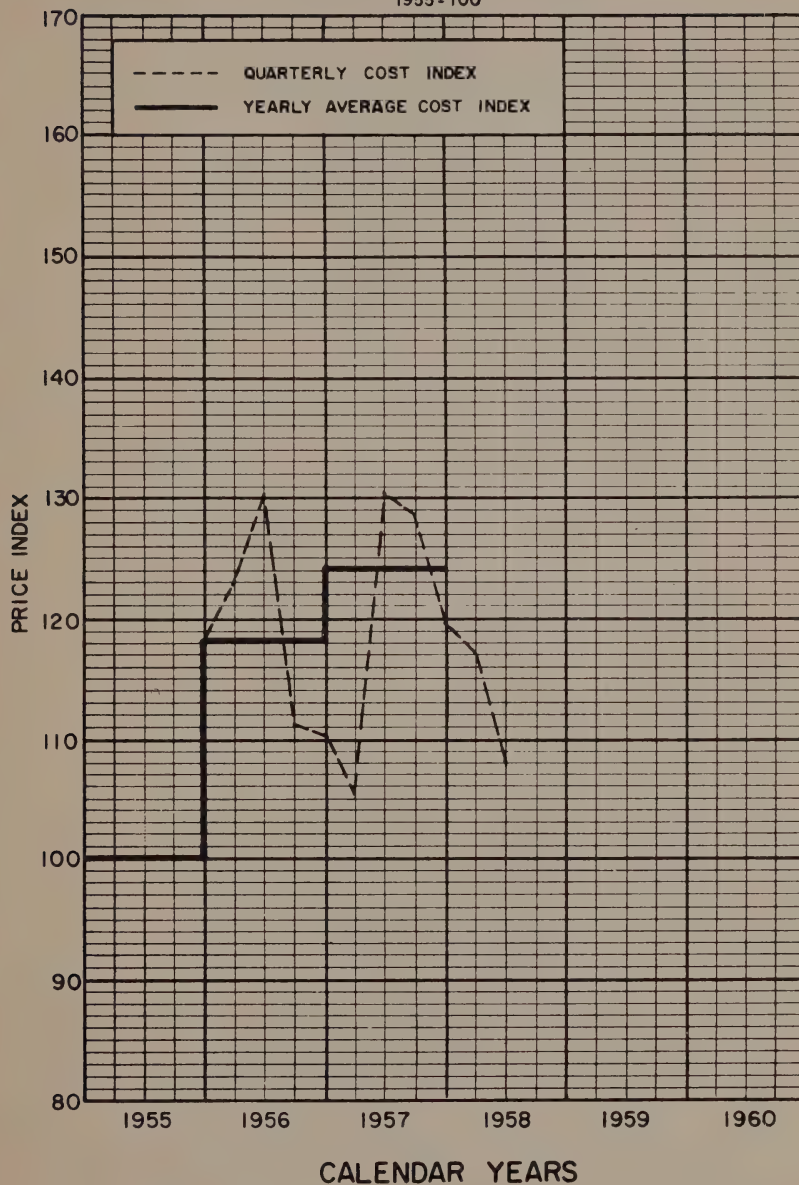


TABLE 17

**STATUS OF MILEAGE ON THE VARIOUS STATE-INTEREST
HIGHWAY SYSTEMS IN NEVADA AS OF
DECEMBER 31, 1957**

County	IMPROVED BY STATE HIGHWAY DEPARTMENT			Total
	Federal-aid system	Federal-aid secondary system	Remaining State Highway system	
Churchill.....	147.3	84.5	.....	231.8
Clark.....	273.5	205.1	2.8	481.4
Douglas.....	49.4	39.6	1.4	90.4
Elko.....	330.7	183.4	.....	514.1
Esmeralda.....	115.2	106.7	8.2	230.1
Eureka.....	74.0	90.7	0.1	164.8
Humboldt.....	135.2	117.1	0.1	252.4
Lander.....	103.9	105.8	20.6	230.3
Lincoln.....	99.8	201.9	.....	301.7
Lyon.....	62.1	162.2	3.9	228.2
Mineral.....	108.6	92.9	11.1	212.6
Nye.....	240.7	242.6	4.3	487.6
Ormsby.....	20.7	14.4	3.8	38.9
Pershing.....	75.0	42.6	.....	117.6
Storey.....	.....	12.7	.....	12.7
Washoe.....	93.4	158.2	13.6	265.2
White Pine.....	265.1	121.7	.....	386.8
Totals.....	2,194.6	1,982.1	69.9	4,246.6

TABLE 18

**MILEAGE BY SURFACE TYPES AND SYSTEMS AS OF
DECEMBER 31, 1957**

Type				
A-B Primitive and unimproved ..	.....	.....	.....	.....
C-D Graded and drained and soil-surfaced.....	.....	.....	.....	.....
E Gravel or crushed stone ..	0.4	75.0	43.5	118.9
F Bituminous surface treated.....	.....	11.0	0.4	11.4
G Roadmix or plant-mix surface.....	2,188.0	1,890.4	25.3	4,103.7
H-I High type bituminous.....	5.2	5.5	0.6	11.3
J Portland cement concrete.....	1.0	0.2	0.1	1.3
Totals	2,194.6	1,982.1	69.9	4,246.6

TABLE 19

COMPARISON OF AVERAGE DAILY TRAFFIC AT AUTOMATIC RECORDERS FOR EIGHT FISCAL-YEAR PERIODS

	Station	DAILY AVERAGE							
		1950-1951	1951-1952	1952-1953	1953-1954	1954-1955	1955-1956	1956-1957	1957-1958
101	U. S. 40, east of Sparks	2,825	2,990	3,240	3,555	3,904	4,066	4,723	4,940
102-A	U. S. 41 and 466, south of Las Vegas	3,325	3,910	4,483	5,073	5,465	5,666	6,200	5,678
103	State Route 46, south of Reno	4,294	4,500	4,564	5,580	5,654	708	789	883
104	U. S. 335, north of Carson City	2,035	2,132	2,396	2,674	2,964	3,143	3,283	3,581
105	State Route 59, south of Lovelock	3,392	3,394	3,393	3,393	2,999	2,69	3,303	3,303
106	U. S. 40, east of Elko	2,176	2,307	2,557	2,476	2,553	2,582	2,632	2,670
107	U. S. 40, east of Elko	587	644	655	691	753	767	798	744
108	U. S. 50, east of north of McCall	509	556	637	761	849	936	1,073	1,023
109	U. S. 6 and 93, north of East Ely	6,330	8,050	9,606	10,564	11,323	11,343	10,520	10,213
110	U. S. 93 and 95, southeast of Las Vegas	586	611	712	750	830	881	912	916
111	U. S. 6 and 95, west of Tonopah	613	1,419	1,301	1,124	1,602	1,455	1,907	1,743
112	U. S. 95, northwest of Las Vegas	1,264	1,314	1,378	1,569	1,592	1,632	1,767	1,733
113-A	U. S. 40, east of Wells	2,731	2,843	3,343	3,711	3,658	3,706	3,909	3,903
116	U. S. 40, west of Verdi	421	453	541	587	562	572	580	618
117	State Route 12, north of Logandale	1,114	1,311	1,476	1,648	1,911	2,076	2,338	2,495
118	U. S. 50, east of Spooners	599	670	787	938	991	980	949	644
119-A	State Route 3, south of Yerington	1,804	2,131	2,306	2,579	2,614	2,661	2,806	3,007
120	U. S. 91 and 93, north of Nellis Air Base	1,658	1,822	1,859	2,051	2,104	2,183	2,219	2,228
121	U. S. 40 and 95, northeast of Lovelock	1,322	1,171	1,594	1,685	1,720	1,736	1,808	1,859
122	U. S. 40, west of Battle Mountain								
123	U. S. 50, one mile west of Peterson's Maintenance Station								
124*	State Route 27, west of U. S. 395				242	262	269	290	275
							773	1,011	1,238

*Recorder No. 124 installed January 1, 1956.

TABLE 20

DIVISION OF REVENUES FROM MOTOR VEHICLE REGISTRATIONS TO COUNTIES (BY STATE CONTROLLER)

County	1951	1952	1953	1954	1955	1956	1957	1958
Churchill	\$3,565.00	\$3,598.25	\$2,967.75	\$3,426.00		\$7,070.25	\$3,958.50	\$4,021.50
Clark	22,116.00	25,983.00	24,108.00	29,400.75	\$35,049.75	33,042.75	45,546.75	44,239.50
Douglas	1,678.00	1,765.25	1,440.75	1,692.75		3,041.25	1,802.25	1,998.75
Elko	5,790.00	5,780.75	4,746.00	4,983.75		9,072.75	5,226.75	5,298.00
Esmeralda	377.00	404.25	282.00	288.75		492.00	33.75	320.25
Eureka	452.00	540.50	462.75	454.50		945.00	556.50	598.50
Humboldt	2,610.00	2,502.75	2,008.50	2,246.25		4,208.25	2,692.50	2,820.00
Lander	1,855.00	1,836.75	1,699.00	1,724.50		1,337.25	860.25	907.50
Lincoln	1,631.00	1,748.25	1,396.50	1,618.50		2,646.00	1,563.75	1,587.00
Lyons	2,700.00	2,296.50	2,315.25	2,850.75		4,980.75	2,980.50	2,979.00
Mineral	2,366.00	2,491.50	2,846.25	3,150.00		3,517.75	3,063.75	3,137.50
Nye	2,614.00	2,743.00	1,833.75	2,013.00		4,019.25	1,986.00	2,532.75
Owensby	1,793.00	1,871.50	1,623.00	1,757.25		3,916.50	2,313.00	2,744.25
Pershing	2,614.00	2,614.00	1,973.50	1,905.50		2,937.75	1,709.25	1,717.50
Storey	355.00	343.75	267.75	267.75		506.25	327.00	337.50
Washoe	26,648.00	27,346.25	21,420.75	23,583.50		46,238.25	29,833.00	31,647.75
White Pine	4,327.00	4,802.50	3,941.25	4,260.00		8,370.00	4,972.50	5,163.00
Totals	\$80,225.00	\$86,083.00	\$73,924.50	\$84,429.75	\$35,049.75	\$138,402.00	\$109,746.00	\$111,770.25

TABLE 21

DIVISION OF REVENUES FROM FUEL TAXES TO COUNTIES (BY STATE CONTROLLER)

County	1951	1952	1953	1954	1955	1956	1957	1958
Churchill	\$32,166.43	\$36,147.83	\$41,366.14	\$48,479.43	\$53,940.71	\$58,170.77	\$66,894.80	\$57,663.60
Clark	215,917.03	260,283.27	309,418.44	370,665.00	410,587.25	450,540.91	493,723.08	463,794.18
Douglas	18,147.10	17,222.50	20,958.44	23,579.49	24,461.12	24,777.04	30,084.92	25,217.84
Elko	108,468.09	121,263.53	139,237.15	153,734.49	156,780.73	162,203.31	183,548.89	159,028.25
Esmeralda	12,919.38	14,678.53	16,632.10	17,851.36	19,060.47	21,196.17	23,832.79	21,225.23
Eureka	33,623.72	16,680.73	19,952.91	19,005.44	21,356.44	22,974.69	25,163.51	22,311.86
Humboldt	55,157.67	59,471.34	68,696.05	76,837.33	80,425.44	86,735.28	97,452.25	84,486.65
Lander	29,474.72	29,827.82	34,056.51	36,057.73	37,940.89	41,256.48	45,263.04	39,907.77
Lincoln	33,450.06	36,453.82	43,551.58	46,538.02	48,668.37	50,962.01	57,602.75	48,697.64
Lyons	32,705.80	37,273.81	47,883.75	50,912.47	59,124.47	66,391.22	69,434.28	59,980.18
Mineral	25,341.35	32,219.94	38,345.46	41,127.32	35,742.64	36,194.74	47,655.76	41,791.24
Nye	51,356.72	59,305.28	63,617.54	64,844.60	90,430.36	88,352.14	98,173.46	83,515.72
Owensby	51,004.52	22,605.28	26,943.33	32,052.86	34,639.74	34,646.48	41,166.78	38,016.20
Pershing	31,034.53	39,613.66	46,833.36	50,187.05	51,763.60	52,474.80	59,955.24	52,115.61
Storey	206,988.33	215,681.14	5,894.61	6,059.62	6,641.97	7,324.66	8,137.39	7,410.30
Washoe	215,594.84	215,594.84	249,138.66	280,857.47	299,986.65	321,683.22	368,734.54	324,980.02
White Pine	60,990.95	67,893.72	78,190.67	89,937.16	97,724.24	100,801.88	115,331.83	98,047.84
Totals	\$957,064.14	\$1,074,143.84	\$1,250,722.40	\$1,408,872.97	\$1,529,275.09	\$1,627,565.89	\$1,832,145.31	\$1,628,190.13

CHART 8

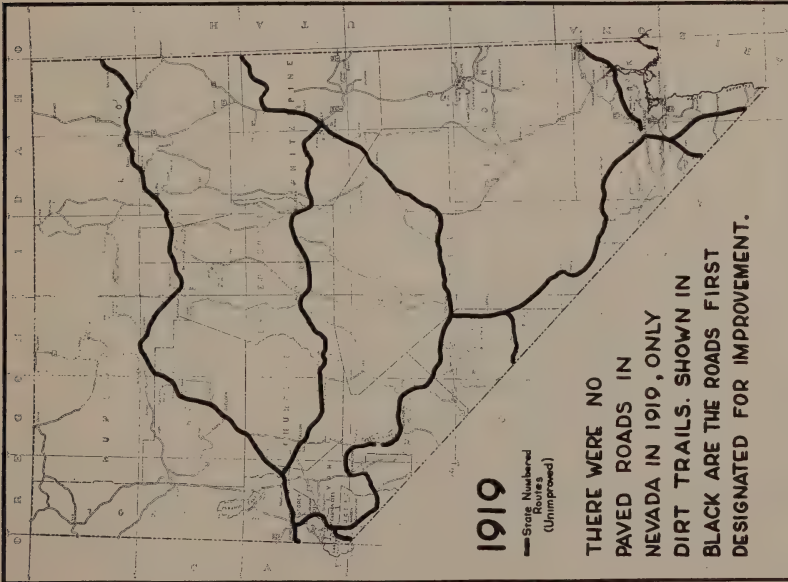


CHART 9

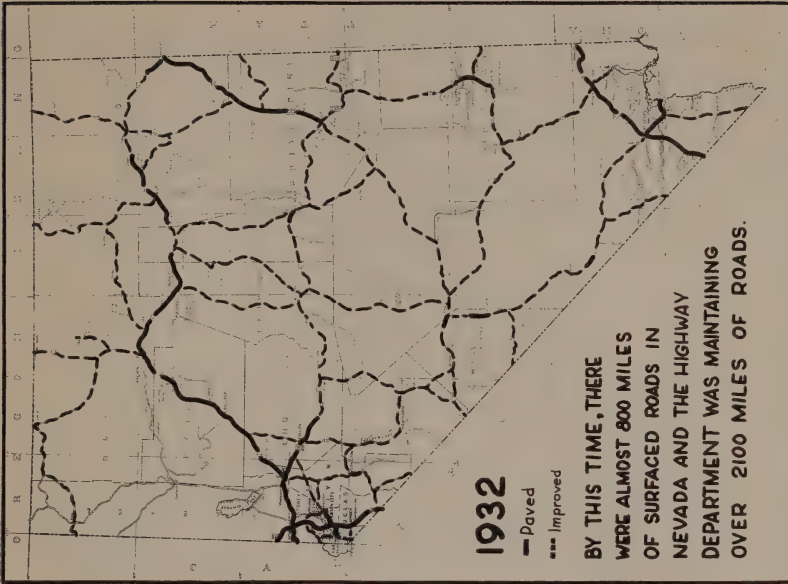
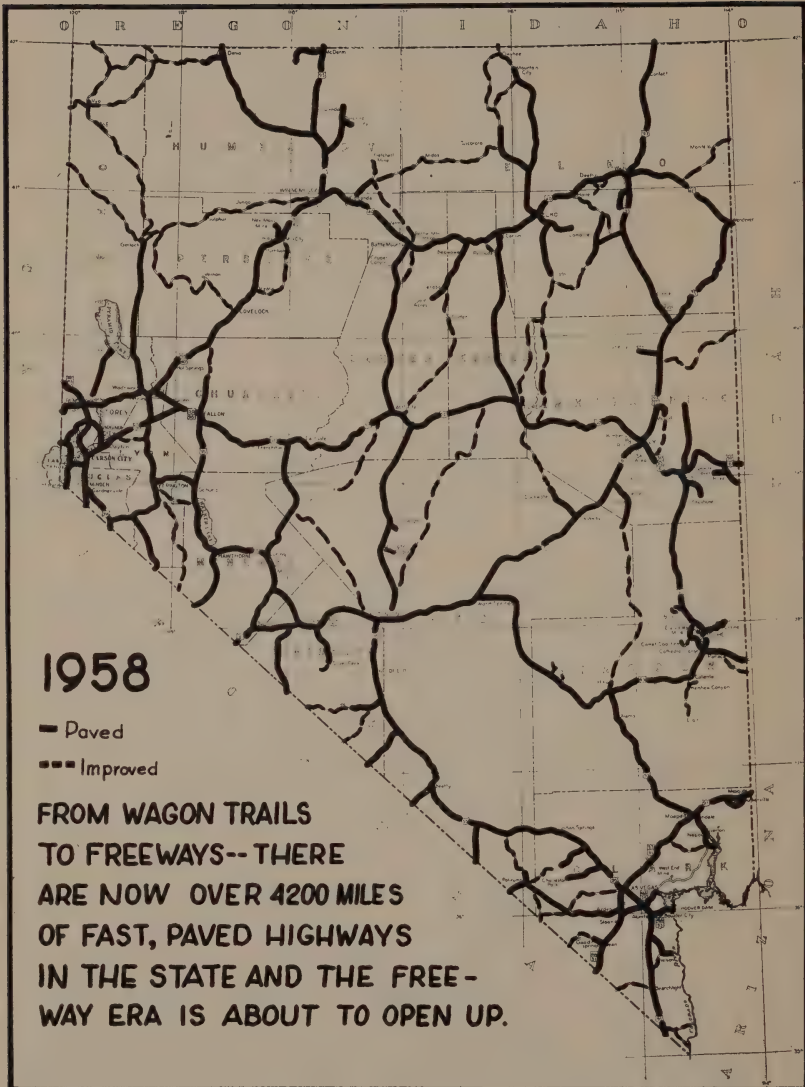


CHART 10



IN APPRECIATION OF FAITHFUL SERVICE

This Twenty-first Biennial Report of the Nevada Department of Highways is dedicated to that growing body of employees who have served 15 years or longer with the Department.

Thanks to their dedicated and faithful service, it has been possible for the Department to provide a constantly expanding and improved system of highways for the people of Nevada.

SERVICE RECORD

35 YEARS OR MORE

Armstrong, G. F.	Holecomb, William T.
Berning, A. "Dutch," Jr.	Mills, Huston D.
Glock, J. A.	Pohl, Ernest C.
Heidenreich, Andrew	Reid, Bonnie O.

30 TO 35 YEARS

Blaker, Charles C.	Parry, W. R.
Boden, Eldor J.	Perry, James A.
Brown, H. Coleman	Rawls, Paul R.
Cross, Ernest	Rose, Dale V.
Eldredge, Reuben E.	Schultz, Marion I.
Lewis, Robert J.	Sullivan, John M.
Morrison, F. H.	Waite, Marvin H.
Wright, W. O.	

25 TO 30 YEARS

Brockway, G. B.	Leavitt, Thomas D., Jr.
Brown, Charles L.	Little, L. W.
Clyde, Victor W.	Manhire, John T.
Coleman, George P.	McMurtrey, E. A.
Fell, Verrill W.	Meacham, J. D.
Gibson, W. H.	Odell, W. Alan
Harmer, Francis J.	Parvin, Jack
Hays, D. H.	Robbins, Paul E.
Heaps, Wilford	Squires, Herbert A.
Kinne, A. G.	Sundeen, Stanley D.

20 TO 25 YEARS

Baxter, George M.	Johnson, Orrin H.
Bloxham, L. J.	Kinnikin, Margaret
Boardman, E. T.	Koontz, Louis
Bonafous, Joe	Lane, Bruce M.
Borgna, Victor	Leavitt, Vincen E.
Brotherton, Harry	McCardle, John E.
Carroll, Frank J.	McDermott, Tony H.
Christensen, Joseph O.	McInnis, J. R.
Cochran, L. F.	Meder, Zita D.
Deck, Ted	Metzker, Harry M.
DePrati, Pete	Miles, Cyril D.
Doty, Stanley P.	Murphy, Cornelius E.
Dube, Paul J.	Offen, Elmer B.
Fodrin, Melvin J.	O'Sullivan, James
Gardner, Bill G.	Ottini, Ralph J.
Gay, Donald V.	Ream, Mary L.
Giraud, Joseph J., Jr.	Reed, Chester H.
Greenhalgh, Jack F.	Reil, Orvis E.
Grier, George R.	Rochon, Mary
Hannig, Reed A.	Ross, Milton F.
Harbin, Guy	Smith, Charles F.
Hayman, Walter F.	Walker, Oren W.
Howard, A. A.	Zilkey, Willard O.

15 TO 20 YEARS

Anderson, Ivan F.	Dillwith, Ned E.
Antoniazzi, Tony J.	Donati, Guido
Aplin, Charles W.	Fisher, Frank
Barrett, Ralph D.	Gallagher, Thomas L.
Bawden, John E.	Garrett, James L.
Biggs, Robert B.	Gobeli, Fred
Bradley, Delile	Gomes, Joseph V.
Bradley, Ralph W.	Greenhalgh, Harold J.
Chambers, L. G.	Gregory, J. J.
Chapman, Daniel P.	Grinnell, George
Christie, H. J.	Haffey, John J.
Clevenger, Howard	Inks, Virgil
Crampton, Philip H.	Joseph, Owen W.
Cronin, Barry E.	Kirn, Charles
Cutler, Royal H.	Kleinman, L. H.
Darrough, Ray F.	Kramer, Jessie J.
David, Allen A.	League, Robert W.
Denton, Aubrey W.	Lorigan, Ray W.

Manchester, James
Marriage, Edward C.
Mathews, Woodrow G.
Mayer, Henry H.
McDonald, Margaret
Moore, Lemuel M.
Muller, Ernest E.
Munson, Warren
Norton, M. Edgar
Noteware, Norman
Perkins, Clyde K.
Pieretti, Eugene
Pratt, John W.
Primeaux, Patrick
Pringle, Marjorie

Rattazzi, Adele
Reichenbach, Otto
Reil, Willis
Reppert, Myrtle
Sanburn, Jack W.
Schultz, Joseph E.
Sharp, Vernon P.
Smith, C. William
Springer, Thorne E.
Springmeyer, Stanley
Stevens, Glen S.
Totman, Beryl W.
Wallace, James D., Jr.
Wilson, William A.
Wise, Roy B.

RETIREMENT

Fauerby, Nels
Marks, Louis
Dunn, Walter E.
Farnsworth, L. Grant
Welsh, Andrew
Sutherland, David L.
Wilson, Reese T.
Cunningham, Angie
Mayett, Albert W.
Marconnot, Edith

Hamp, Leonard
Miller, Otto P.
Tennille, James B.
Lombardi, Henry P.
Kapich, George Z.
Wilson, Alfred W.
Logan, Ben H.
Springmeyer, Carl H.
Vaughan, Harold J.
Kramer, Ambrose T.

In Memoriam

During the biennium the following employees of the
Department of Highways were taken by death:

NEIL H. AUSTIN

DANIEL A. SULLIVAN

LOUIS F. SIMONSEN

HARVEY CRAIG

ANTOINE R. PRIMEAUX

ROLAND ROY

MATHEW GERBATZ

LESLIE R. LEWIS

HARRIS A. MACNELLY

CHARLES P. RAINEY

ROBERT C. NOYES



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